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Cross-Country Running and the
Contribution Which It Makes
Toward Track Athletics

Emil G. Schultz

Tips on the Running Broad Jump

B. H. Moore

Preparing the Track Team
For the First Meet

George E. Haney



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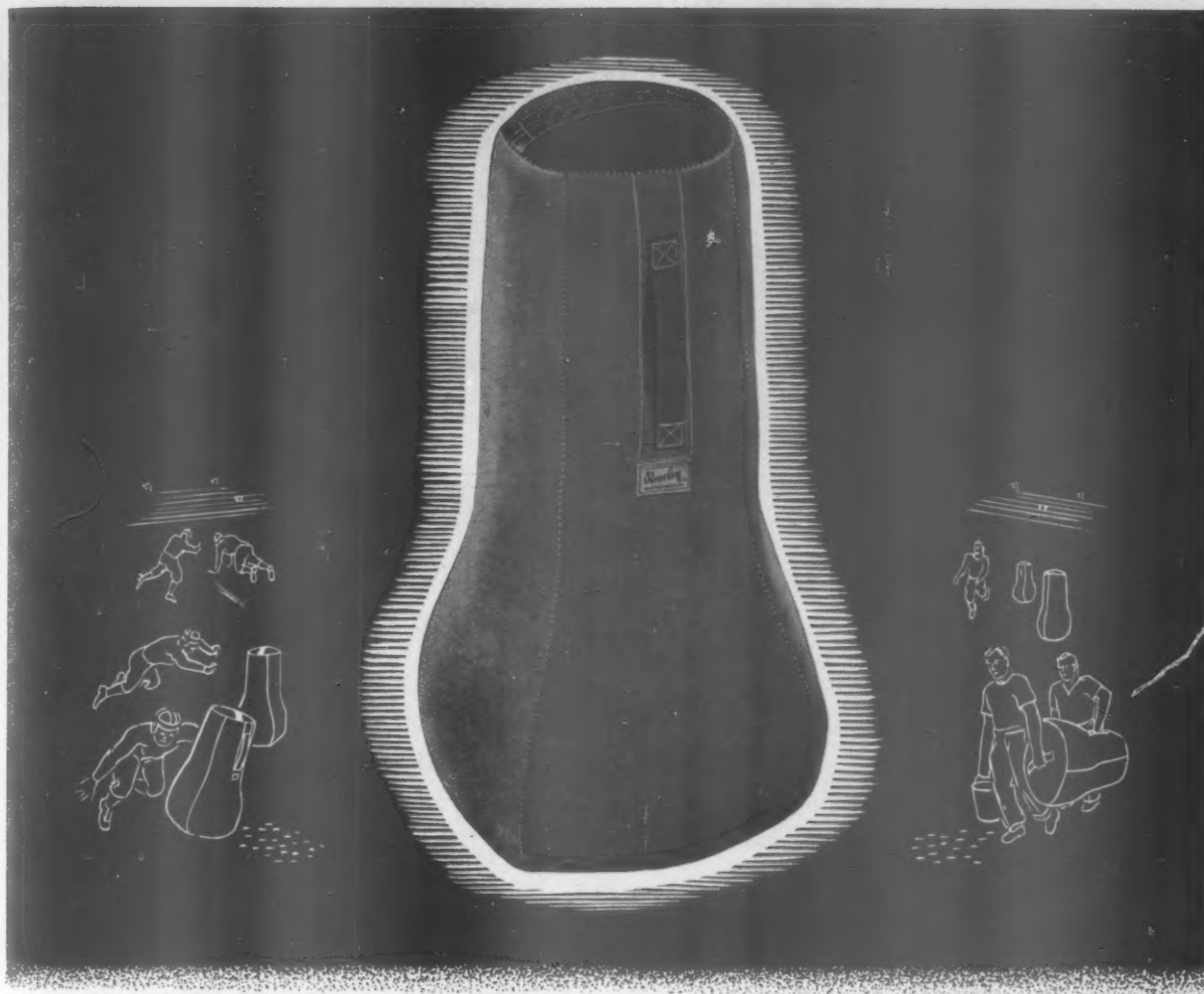
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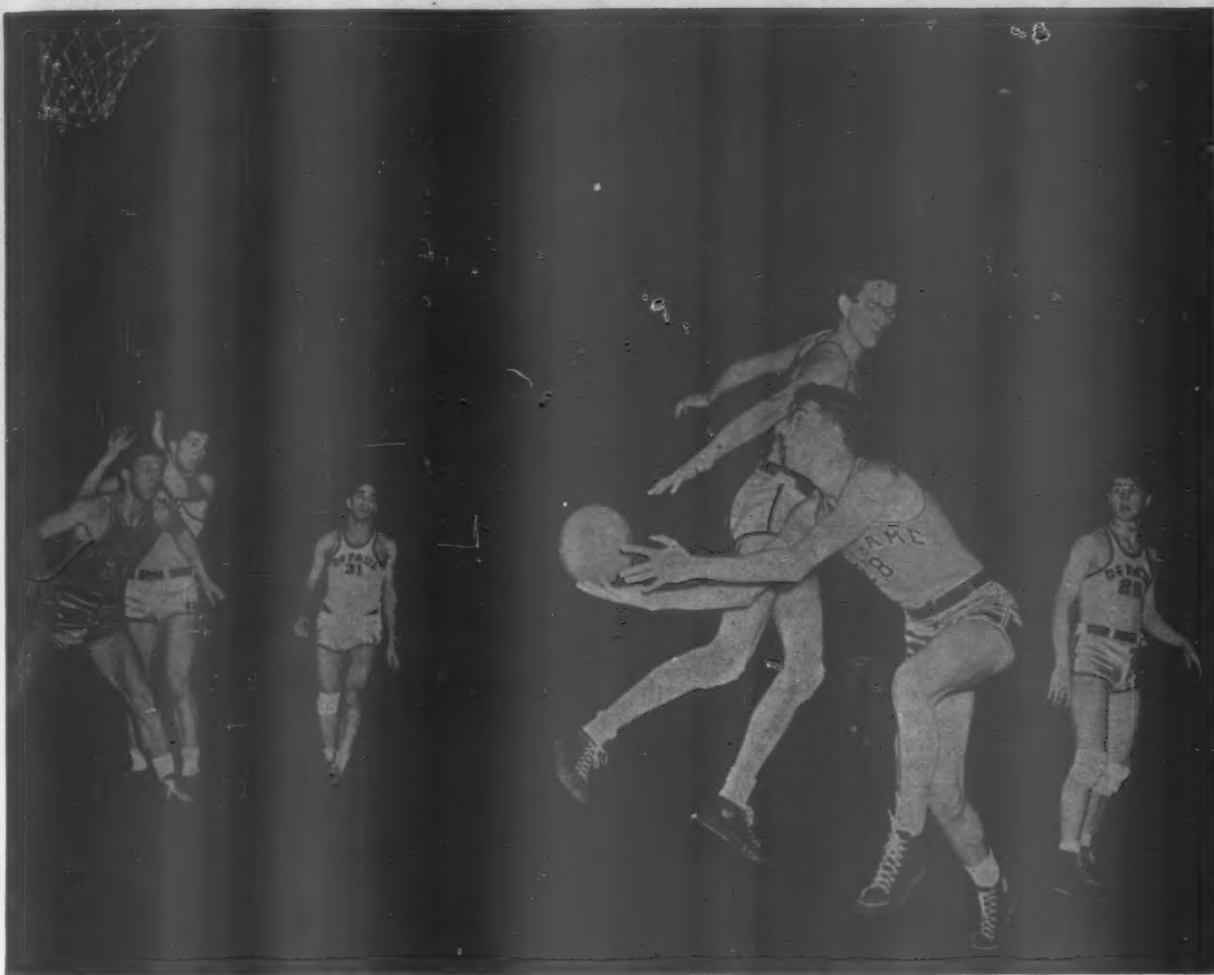
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Basketball Trends

By H. V. Porter

Executive Secretary, National Federation of State High School Athletic Associations

ALIVE game, like a live language grows by addition and modification. This is because the people who use the language or the game are constantly adapting themselves to changing conditions in all fields which influence them. Basketball is no exception. Here are a few thought provokers based on nation-wide reports and observations.

Experimentation

In response to the request of the National Basketball Committee for experimentation along stated lines, several of the state high school associations have been using certain modifications to determine the advantages and disadvantages in rule proposals. In the states of Illinois, Minnesota, Iowa and Missouri, the basket-

ball tournaments and nearly all of the season's games have been played under the modified rule which permits five personal fouls before disqualification. The majority opinion appears to be to the effect that this has made no noticeable difference in the number of fouls that are committed, and that it has reduced the number of disqualifications for fouls of minor severity. Comprehensive statistics have been carefully collected, so that there will be definite figures to supplement opinion. These figures will be available before the National Basketball Committee meets. These will probably have some influence on whether any action is taken to increase the number of permissible personal fouls before disqualification.

The state of Idaho has played all of its games under the modified rule which re-

moves the limit on number of times a player may re-enter the game. Statistics have been collected to determine whether this more liberal rule has resulted in abuse. Majority opinion appears to be that any abuses which are possible under the rule are also possible under the present rule.

All high school games in Michigan have been played under the modified rule which makes the three-second lane rule apply only to the player who is in possession or control. Considerable thought is being given to the advantages and disadvantages in adopting such modification on a nation-wide scale.

Code Improvements

Among the code improvement proposals

which have received considerable attention in meetings of coaches and officials is that which would result in a combining of Sections 2 and 8 of Rule 9 in a substitute Section 2. In their present form, there are some inaccuracies, omissions and inconsistencies. Here are a few illustrations.

The second sentence of present Section 8 is largely a repetition of the first sentence. The last clause is a repetition of the rule title and if this clause is necessary in Section 8, then, in the interests of consistency, it ought to be also a part of each of the other first eleven sections of Rule 9.

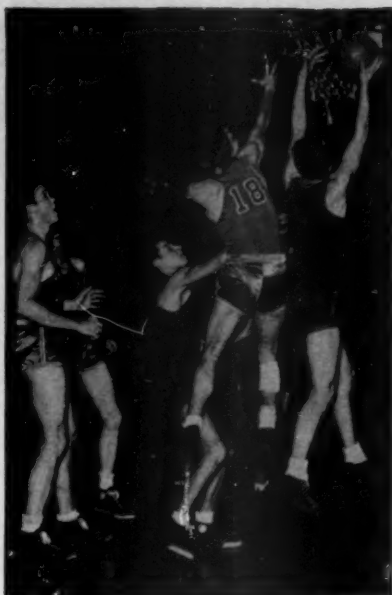
Section 2 omits some of the free-throw violations, such as the requirement that the player who is awarded the free throw must attempt it. There is no adequate coverage for the question of whether a substitute throw must be made by the same player who attempted the original throw even if it is for a technical foul. Likewise, there is no adequate coverage for the question of whether the substitute throw may be waived if it was for a personal foul. The present penalty does not adequately cover the situation which involves both a throw for technical and a throw for personal foul. There is only vague coverage to indicate that, in certain of these cases, the penalty is automatically declined (ignored). In the following proposed rewrite, all of these situations are taken care of in a simple manner by the proposed clause, "A substitute throw shall be attempted by the same thrower under the conditions the same as for the original throw."

Proposed Rewrite of Combined Sections 2 and 8 of Rule 9

Section 2. A player shall not violate the free-throw limitations. After the ball is placed at the disposal of a free thrower: (a) he shall throw within ten seconds and in such a way that the ball enters the basket or touches the ring before it is touched by a player; (b) no free thrower shall touch the floor on or across the free-throw line, and no other player shall touch the free-throw lane, nor touch the ball, nor disconcert the free thrower. The restriction in (b) applies until the ball touches the ring or backboard, or until it is evident it will not touch either.

Penalty 1. If violation is by the offense (free thrower or a team mate) only, the ball becomes dead when the violation occurs; no points can be scored, and the ball is awarded out of bounds the same as if the throw had been successful and there had been no violation. 2. If by the defense only, the ball is not dead until the throw ends. If the throw is successful, the violation is ignored, and if it is not successful, a substitute throw shall be attempted by the same thrower under conditions the same as for the original throw. 3. If by both teams, the ball becomes dead when the offense violation occurs; no points can be scored, and play shall be resumed by a jump between centers at the nearer free-throw line.

Note: If there is a multiple throw, the out-of-bounds and jump ball provisions



Just another scramble for a score. Jack Kareggman (No. 7, right) of Brooklyn College and Chris Wagner (No. 18) of Westminster go into the air for possession of the ball.

apply only to a violation during the last free throw.

Goal Tending

In the college and independent game, the problem which has been most widely discussed in recent months is that concerning the unusually tall player who practices "goal tending." Sentiment appears to be to the effect that the tall player has certain advantages which are legitimate and which should be retained in the game, but there is need for some limitation which would retain desirable advantages while eliminating the practice of "dunking" field goals, batting free throws from the opponent's basket or into the tall player's own basket, and obstructing legitimate tries for field goal in the near vicinity of the opponent's goal.

One proposal for retaining desirable advantages and eliminating the undesirable ones is the following.

1. Mark in the free-throw lane a broken arc between the H and V alley marks, such arc to have a curvature the same as the free-throw circle so that it, with the two three-foot sections of the lane lines, will form a restricted area in the immediate vicinity of the basket.

2. Rewrite Sections 12 and 13 of Rule 9 as follows:

Section 12. Touch the ball or basket while the ball is touching the cylinder directly above the basket.

Section 13. Touch the ball while it is entirely above the level of the basket ring and directly above the part of the lane which is bounded by the H and V alleys and the nearer broken arc (with a 6-foot radius) shown on the court diagram. This

restriction applies to any pass, bat or try, in which the ball leaves the thrower's hand outside the restricted column and until such pass, bat or try has touched the ring or backboard.

Penalty (Sections 12 and 13). If violation is at offender's own basket, no points can be scored (dead ball); if at opponent's basket, the free throw point or field goal points are awarded. In either case, play is resumed the same as if the goal had been successful and there had been no violation.

Comment

The proposed Section 12 is somewhat more restrictive than the present one. It applies to both goals and it applies whenever the ball is touching the basket cylinder rather than when the hand is in the cylinder. The primary reason for this is to prevent "dunking" and to prevent slapping the ball away, when it is on its way from the backboard toward the basket. In all such cases, the ball would be touching the basket cylinder and, consequently, could not be touched by the tall player without the commission of a violation.

Section 13 provides for a broken arc between the first two alley marks. Such arc would have the same curvature as the present broken arc which is a part of the present free-throw circle. The proposed rule would give the unusually tall player full rights on rebounds and it would permit him to attempt a goal from anywhere except that he could not "dunk" the ball because of Section 12 above. On defense, the tall player would find it necessary to stay out of the indicated area (approximately three feet from the basket), or else it would cause him to stay on the floor (not jump) in this area. This would prevent him from knocking down tries in which the ball leaves the hands of the thrower outside the restricted area. One reason for this latter provision is to avoid the difficult decisions which might otherwise be necessary in cases where there is a jumble of players under the basket. This includes rebound bats in the near vicinity of the basket.

Since this restriction is needed for only a very few cases (practically none in high school), it would be possible to make this proposal as applying only to the age group above high school; or it might be made as an option to be exercised by the home team. If that were done, any local manager could choose to mark his floor as indicated and to order the officials to operate under the rule. It might be adopted as a rule to be enforced at the option of either participating coach who would notify the opponent in advance of the contest as to whether the rule is to be enforced for that particular contest.

The National Basketball Committee meets March 27th and 28th. These proposals, along with others which are being discussed in various sections of the United States and Canada, will receive attention at this meeting.

Tips on the Running Broad Jump

By B. H. Moore
Head Coach, Louisiana State University

BEFORE discussing any specific event I would like to make a few statements in regard to track in general. I have always contended that many high schools were passing up a great opportunity to develop boys by not having a well-rounded track program. I know, however, that such a program is impossible in some high schools and colleges, because of the shortage in facilities such as a good outdoor running track, because of insufficient funds to buy track equipment of all sorts, and because of the lack of sufficient coaching personnel.

Good running form is the basic fundamental for nearly all athletic events. There are very few good athletes who are not fairly well-co-ordinated runners. I do not mean that each and every boy should be a speed demon, but he should have co-ordination between legs, arms, and other muscles of the body.

In pre-war days one of the first things that the freshman football coach did in the fall at Louisiana State University was to spend some time teaching boys, particularly the big linemen, how to run. Most of them ran back on their heels, with arms tense and down by their side, hands closed and clenched, getting no help whatsoever from the use of the arms and upper part of the body. After a big lineman has learned to use his arms in co-ordination with his legs, improvement shows up immediately in his line play.

I have often made the statement (of course, I am willing to stand corrected on this, for I may be wrong) that, instead of having spring football practice in high school, all the boys who are to be invited out for football in September should be put through a thorough course in track, particularly running. I believe that such a program would improve football more in September than the actual spring practice of football. I am sure that football candidates for the line do not get one-tenth of the amount of running that they need.

Therefore, I say teach boys how to run. Get them up on the balls of their feet, off of their heels. Teach them to lift their knees up, in order to develop more power. Teach them to use their arms in co-ordination with their legs. Teach a slight lean forward in the run, weight forward, and as a result the boy will have some power. American boys do not get enough walking and running practice.

The Qualifications of a Broad Jumper

For discussion of a specific track event I should like to discuss the broad jump.

The qualifications of a broad jumper are speed, spring, and co-ordination. If a boy does not have these qualifications, all the coaching in the world cannot make a broad jumper out of him. It is true that few boys are found with all of these qualifications, and many boys will be seen broad jumping who do not have all of them, but when a boy who has all three is available, he may become a champion.

The importance of speed in this event is obvious. It is exactly the same principal as the more powder put behind a bullet, the farther the bullet will travel. The additional distance gained in this event over the standing broad jump is due to the speed gained on the runway. A running broad jumper should strive to acquire speed comparable to that of the best 100-yard-dash man, and, incidentally, most of the broad jumper's practice work should be done with the sprinters. He should take a great many starts, and 50- and 75-yard dashes. Of course, if he is running the 100- and 220-yard dashes, he will naturally get this type of work, but if he is not one of the regular sprinters, then he should take the work with the sprinters plus a 220-yard dash once or twice in a week, in order to build up endurance.

To acquire distance in the broad jump, the jumper must be able to combine speed down the runway with height off of the take-off board, and height is obtained from spring at the take-off. The power of the spring depends on the strength of the foot, leg, and thigh muscles and their ability to respond quickly and efficiently with the take-off. The broad jumper, however, may improve this spring by work over the hurdles, skipping rope, jumping up and down on one foot and then the other, and by other practices, although I believe that much of this spring must be natural.

It is thoroughly possible for a boy to have plenty of speed and plenty of spring in his legs and, yet, fail to gain any distance in the broad jump because of poor body co-ordination which keeps him from getting sufficient height off of the board.

Fundamentals of the Broad Jump

(Fundamentals of the broad jump are: First, the approach to the take-off board.) A broad jumper's approach should be from 75 to 120 feet from the take-off board. Personally, I prefer that it be at least 100 feet and most of the better boys use 110 to 120 feet. I think this run is necessary for the boy to become relaxed as he runs down the approach. It is highly important that the approach to the take-

off board be so perfect that there is no doubt in the jumper's mind that he is going to hit the board with his take-off foot. The broad jumper should have no worry in his mind when he is going down the runway. He should go down the approach full speed ahead, with a good forward lean all the way, and hit the board at perfect ease.

In this connection I wish to say that it is my opinion that too many coaches have a tendency to bother broad jumpers with too many check marks. I think check marks definitely have a tendency to tie the jumper up and worry him more than aid him. One or two check marks may help, but three or four will certainly hinder. I like to measure the boy's take-off, and if it is 100 feet, let him start on that mark and then hit about one check mark down the runway some 30 or 40 feet from the board, and let it go at that. I wish, however, to say that this is just my own personal opinion and your opinion is as good as mine.

(The second fundamental is important. Two or three strides before reaching the take-off board, the jumper should drop his arms slightly and quit pulling and, thereby, relax just a bit if possible.) By doing this, he will not cut down his speed, but will be in a position to gather himself together for the spring off of the board.) Most broad jumpers' last stride is from six to twelve inches shorter than the other strides down the approach.

(The third fundamental which must be watched very closely and constantly corrected is this: the jumper's take-off foot must be well under his body and he must be leaning forward and not backward; his knee should be bent slightly to act as a recoil.) If the take-off foot is a way out in front of the body, it will be impossible for him to get any spring or lift off of the take-off board.

The jumper should start the jump practically flat-footed. From this position he rocks up on the ball of his foot with his knee well under his body and in a crouched position. Following this movement is the forward swing of the free leg, the straightening up of the take-off leg, and the forward and upward swing of the arms.

Flight Through the Air

There are two types of flight through the air. First, just the plain old jump, where the jumper depends upon height and speed to carry him through the air. Second, the walking-in-the-air type or the
(Continued on page 55)

Cross-Country Running and the Contribution Which It Makes Toward Track Athletics

By Emil G. Schultz

Head Track Coach, Evanston Township High School, Evanston, Illinois

WHAT is the reason for the sudden enthusiasm and interest in cross-country running in some of our high schools? A few years ago one heard comparatively little mention of this sport around any high school campus. In Evanston Township High School the sport has gained considerable momentum in the past few seasons.

It has been suggested that the physical fitness programs, offered in the schools as a result of the war, are somewhat responsible for the increase in participation in cross-country running. Most physical fitness programs, now set up in the high schools and colleges, have the development of endurance as one of the most important objectives. In my opinion, judging from letters received from young men in service, physical endurance developed in the school physical fitness programs is uppermost in their thoughts when they write of their daily routine and training. Judging from the fighting on some of the present-war fronts, we should all realize that the man with the greatest amount of physical endurance has the best chance to survive. We must then, to an extent, assume that the present conditions and programs make some contribution to the increased interest, enthusiasm, and participation in this sport of endurance running. There are, however, several other contributing factors which are truly worthy of consideration.

These factors which I would like to bring to light originate from expressions and comments made by many of the boys who have participated in the cross-country programs. The phases of the program which have received considerable favor and comment from athletes are the complete schedule for the season, daily training schedule, point system, and awards. It is obvious to me, then, that in order to create interest and enthusiasm in this sport, a detailed plan for organization is most important.

In discussing first the complete schedule for the season, we must take into consideration a number of factors. Schedule making requires a well-organized plan for maintaining and building interest on the part of the participants as the season progresses. A schedule of six or seven meets for a season without open dates seems most satisfactory. The opening meet should not be

A NEW contributor to the pages of this publication is Emil G. Schultz, head track coach of Evanston Township High School. A graduate of the University of Illinois in 1925, with a master's degree from Columbia, Mr. Schultz has successfully coached football, basketball and track at Proviso Township High, West Aurora and Elgin. Since 1931 he has been at Evanston Township High School where his track teams have won twelve major championships.

held until four or five weeks of fundamental training have been completed. Ideally done, it would be best to hold trials at the close of the fourth week of training and, then, on the following date on the schedule have the opening meet of the season.

The mention of the four-week early-season training period opens the way for the next topic for discussion.



Illustration 1. A bending and stretching exercise which is used by most experienced track athletes.

The initial week of training should be entirely free from strain, racing, or time trials. A program which has proved to be quite satisfactory for the opening week of training will now be discussed in a more detailed manner. Probably the best and most valuable habit any athlete can acquire during his training and competition in any athletic event is a regular warm-up period before participation. For the particular sport of cross country, a twenty-minute limbering-up period is recommended. This period might begin with running in place, very slowly at first and then with tempo increased. While doing this exercise, the participant should be mindful of coming down on his toes, raising his knees rather high, and aiming for arm movement which resembles that of arm carriage in distance running. The hand should drop back to the hip bone and, then, come up midway across the body in front of the chest. This exercise should not be continued for more than two minutes at a stretch.

Bending and stretching exercises, also, should be included in this warm-up period. There are several exercises, all of which are excellent, that should be included in this group. In mentioning a few of the best bending and stretching exercises, we would select, first, the familiar one of standing erect and bending at the hips, attempting to touch the toes with the fingers. Variations of this exercise require the placing of the fingers of the right hand on the toes of the left foot, while the other arm is straight, moves out and around to the back of the body. Alternating the hand that goes down to touch the opposite side foot completes the movement of this exercise. After practicing these stretching and bending exercises for two or three weeks, it is entirely possible that most athletes will be flexible enough about the hips to place the palm of the hand on the ground without undue strain. Bending to the rear to form an arch in the back with hands raised is also an excellent movement to include in the warm-up drills. The sit-ups with several variations are also good exercises, especially if the conditions of grass and weather are favorable. Working on the ground is not at all recommended in cold weather, or when the ground is wet. It should be kept in mind that strength and



Illustration 2. A bending exercise which requires the touching of the palms to the floor. A fine exercise for hurdlers.

resistance in the body should be conserved for better performance rather than be used up in resisting disease and cold germs which usually appear during inclement weather.

The twenty-minute warm-up period, just discussed, should be a daily practice throughout the season because it is very essential that as many as possible of the body muscles be loosened up before running is attempted. Daily running for the first week should be limited to trotting or jogging. It appears that our best results have been obtained when we limit the distance to two miles each day during the first few weeks. The two miles, however, are not a continuous run. The distance is broken up into eight quarter-mile distances with a 220-yard rest walk between each 440.

For the second week, the distance should be divided up into five 660-yard runs with 220-yard walks between each run. There should be a slight increase in speed in running during the second week; a 220-yard dash without exertion should be taken to finish off the day's practice. This dash is for the purpose of developing speed and finish at the end of the race.

The third week calls for work on four 880-yard runs and again increasing the speed and walking 220 yards between each run. A 300-yard dash at not quite full speed should conclude the day's practice.

At the beginning of the fourth week, the daily practice consists of two one-mile runs with twenty minutes of rest, that is, walking between the two runs. After another rest of fifteen minutes by walking, two 100-yard dashes are run at almost top speed. At the conclusion of the fourth week of training, a trial two-mile run is a good practice. After four weeks of training, as I have outlined, each athlete receives his own individual training schedule which is adapted to his own particular

needs. The individual training schedules include work on endurance, speed, stride, arm-carriage, head-carriage, racing strategy, and finish at the end of the race.

Now a few words about the point system. During my coaching cross country, I have found that some kind of a point system is almost necessary when comparisons between individuals are attempted. It is not unusual to see practically the entire squad crowding around the point chart before practice; this is especially true on the day following a meet. The competition between squad members often becomes almost as keen as that which develops between the team and an outside opponent.

Scoring in cross country often seems confusing to many because the team with the low, instead of high score, is the winner of

Township High School. The requirement for a major letter is placed at fifteen points for the season. Some athletes who are not capable of earning the fifteen points are given minor awards. In using this point system, we noticed that about six or seven boys are able to garner enough points for the major award. From the competitive angle, that is generally considered to be a desirable situation.

Now with some opinions, coaching methods, and systems out of the way in this article, it is possible to mention what contribution cross-country running may make toward track athletics, especially distance running. In several high schools in this area, it is thought that cross-country running does not contribute a great deal to the development of a track team. This idea prevails in those places where field house facilities for track are present and indoor running begins with the first cold wave of the fall season. If it were not for cross-country running in our school, I do not believe that we could compete successfully with other schools in indoor competition. The cross-country running in the fall gets the distance runners in excellent physical condition and our problem, when no indoor-running facilities are available, is how to keep them fit for competition during the winter. A program of physical fitness drills for thirty minutes each day, and several starts in some out-of-the-way hall or balcony of the gymnasium help keep up the endurance, built up in the fall. Occasionally some of the athletes put on two sweat suits, caps, and, with towels around their necks, dash outside for a few laps on the outdoor track. When the ground is covered with snow that kind of a workout is out of the question. Some boys run to, and from, school each day to help maintain the fitness that keeps them in the races during the indoor season. Cross country gets the track athletes in excellent physical condition; this, we think, would be almost impossible without

(Continued on page 35)



Illustration 3. Running in place is a fine exercise to use in limbering up before practice or competition.

the meet. For convenience and simplicity we use a scoring system which all can easily read and understand. The scoring resembles that used in track and field events. In each meet the first ten runners from our school receive points, regardless of how they placed. The first competitor to finish in the race receives five points, the second four and one-half points, the third four points, and so on down to the tenth competitor who receives a half point. To explain further, the tenth runner receives a half point, even if he finishes twenty-fifth in the meet.

With this kind of a point system it is an easy matter to set up some definite requirements for the major-letter award, offered for athletic competition in Evanston



Illustration 4. One of the best exercises from the sit-up group.

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JOHN L. GRIFFITH, Editor

The Army Attitude Toward College Athletics—Past and Present

NEARLY forty years ago, in 1905, to be exact, newspapers and magazines were filled with articles reflecting, in the main on college athletics. The opposition to the various sports as managed by the universities and colleges was so pronounced that Chancellor H. M. MacCracken of New York University invited a large number of college and university presidents to meet in New York with the evident idea that the presidents at that meeting might, more or less, unanimously agree to abandon intercollegiate football. For a time it appeared, with many delegates at this meeting strongly prejudiced against the game, that a motion to abandon the sport would be passed more or less unanimously. A young captain from West Point, Captain Palmer E. Pierce, made a talk in defense of football.

Because of the attitude of Captain Pierce and others who believed that football was worth saving, a motion was made to form an association of some sort to eliminate any bad features that might be inherent in the game, and thus save a great sport.

The captain later stated that he went to this first meeting with instructions from the superintendent of the United States Military Academy, to vote in favor of reforming football and not destroying it; to provide some permanent organization for the betterment of intercollegiate athletics and for the proper control and support of representative rules committees. Then and there, the National Collegiate Athletic Association was formed.

By 1906, thirty-nine colleges had joined the new National Collegiate Athletic Association. Today, there are two hundred and twenty-nine members of this association.

The points we want to bring out in this editorial are two-fold: First, to remind our readers that the National Collegiate Athletic Association from the very beginning was pro-athletics, and, we may add, the members of this association are still pro-ath-

letics, which, of course, includes college football.

Secondly, to stress that the army men at West Point very wisely suggested that the college men of the country rid college athletics of any evils attached thereto, and not attempt to destroy the game, unlike many reformers who feel that the way to cure the patient is to kill him.

In a way we may not be going too far in saying that it was the United States Army through the superintendent of the Academy and his representative, Captain Palmer E. Pierce, who saved college football at the turn of the century. From that time on to the World War I, other army men at different times have stated their belief in college athletics.

In 1911, Major General Leonard Wood, Chief of Staff of the United States Army, was invited to address the National Collegiate Athletic Association on *The Military Value of Athletics to the Nation*. The general, at the last moment, found that he could not attend and directed Colonel Stuart of West Point to make an address on the topic. In Colonel Stuart's speech he stated in part, "As far as collegiate athletics are concerned, they are of value to the nation in so far as they encourage healthy participation in athletics, which turns out the student body in better physical condition than they would be, did they not participate in athletics. Therefore, so far as it appears from a purely army standpoint, the attitude which we should encourage on the part of the colleges is that of encouraging, not the development of a small number of men who are exceedingly proficient in a given sport, but to encourage in any way that this body legitimately can, a general participation in athletic events, which will tend to alleviate the general physical standard of all of its student bodies."

At the time of the last war, President Woodrow Wilson, a strong believer in athletics and a former coach, together with the Secretary of War, the Honorable Newton D. Baker, approved in spirit the use of athletics in our army as a part of military training. With the help of Dr. Joseph E. Roycroft, Secretary of War Newton D. Baker had a great deal to do in convincing staff officers that athletics had intrinsic values in war time by giving his approval to those who were called upon to conduct army athletics.

Following World War I, the Secretary of War and the Secretary of the Navy and other men, who had seen the value of athletics in the matter of preparing and training men for service overseas, stated again and again their belief in a proper use of games and sports.

When World War II was in the offing, our government created a morale division headed by a very capable leader who was later commissioned, General Frederick H. Osborn. General Osborn called into active service Ted Bank, now Colonel Theodore P. Bank, former Michigan football star and a prominent college coach, to head up athletics under the Morale Division, later called the Special Services Division, and athletics were thought of more in terms of morale. The men at the head of things in present-day Washington have apparently never been thoroughly convinced that, as Colonel Stuart

had said, "collegiate athletics are of value to the nation in encouraging a healthy participation in athletics which turns out the student body in better physical condition than they would be, did they not participate in athletics.

When, however, the A.S.T.P. was set up, and A-12 boys were sent to the different colleges and universities, a spokesman for the War Department announced that the army boys on the campuses would not be permitted to spend their hour of free time each day in practicing with college athletic teams. The same spokesman was quoted as saying that the army would have nothing to do with "big-time" football.

This review of the attitude of army men toward college athletics for forty years or more may be timely, because we are all concerned with the problem of what we should do after the war is over in connection with the setting up of physical training programs and the conduct of the various activities which, of course, include intercollegiate athletics.

Our guess is that the army men who come back from the fighting fronts will be just as strong for our fighting games, especially football, as were their predecessors who nearly half a century ago had much to do with perpetuating the game.

The Survival of the Fittest, According to Present-Day Interpretation

SOME time ago in an address on *The Role of Youth in the Defense of Democracy*, George Barton Cutten, former president of Colgate University and a Yale football center in an early day, made the following statement:

"There were two bands of pilgrims which came to America, both, so far as we can ascertain, of equal character and ability.

"One landed in a West India island where everything was easy and comfortable, and was never heard of afterward so far as influencing its time or environment.

"The other landed on an inhospitable shore, was met by savage Indians and was forced to obtain sustenance from a none-too-fertile land.

"The latter became the spiritual and economic foundation of our nation and of our democracy."

A few years ago a great many people, somewhat of the opinion that when a child is born in this country that child inherits some of the wealth that has been created by others, attacked the idea of the survival of the fittest. They rather believed that if a boy made a failure of his life, it was the fault of the state and no fault of the lad. They said that the survival of the fittest was the law of the jungle.

Well, our boys are now fighting in the jungle and there is only one law and that is, the most fit survive and the others perish.

Following this war, the soft-life boys will probably again be suggesting that our children should be sheltered, nourished and cared for entirely, and

that, in the minds of many means, they should not indulge in what we call the rough sports. The men who come back will not be leaders of this cult, nor probably will their fathers or mothers accept this idea.

As usual, there are two extremes to be considered, one being just as wrong perhaps as the other. The Spartans represented one idea and the Athenians another. The Athenians, however, believed in the encouragement of manly sports, some of which were even rougher than college football or boxing and wrestling.

We will do well if we never lose sight of this American principle, namely, that the strong survive and the weak perish, but in keeping ourselves strong in times of peace, we should adhere to the niceties of competition.

Who Are Our Friends?

WHO are the people who believe in our school and college athletics, and who are they who do not believe in these institutions? People may be classified as to blondes and brunettes, rich and poor, religious and non-religious, but when it comes to a classification of them according to their likes and dislikes, there is some difficulty. There are those who like garlic and onions, and those who do not like garlic and onions. There are those who like college football and those who do not like college football. The likes and dislikes of the latter class have been revealed in these last two war-years.

Why center the discussion on one sport, some may ask. The reason is that the bitterest controversies have always raged around football. In the interest of simplification, it may be well to take the sport that has been most usually attacked.

Let us then consider who are the friends of college football. Certainly they are not the presidents and their representatives who met in Baltimore in January, 1942. They are not the college administrators and teachers who met in Philadelphia, November, 1942.

Then we may assume that the nine presidents who are reported to have made recommendations regarding participation in college athletics by army men, are not, at least, convinced of the value of athletics in war time.

The men in the War Department, who decreed that the A.S.T.P. students, at least the A-12 men, were to be given a free hour each day with the understanding that they could do anything they wanted to do short of committing arson and murder, with the exception of participating in, or of playing or practicing with varsity squads in, tumbling, fencing, swimming, football, or any of the other college sports, are not our friends.

While some colleges were forced against their will to give up college football, certainly there were some who made it evident that they were just waiting for a chance to abolish the game and, hence use the war as an excuse for carrying out their desires. They are not to be called friends of college football.

The president who called off football in his insti-

tution because there were not enough boys to make up a team, when there were thirty-eight men practicing every day, might not be properly listed as a friend of college football.

The sports writers, who placed their "bets on the wrong horse" back in the months immediately following Pearl Harbor, and thought they would make themselves popular by insisting that competitive games be abandoned for the duration, demonstrated that they were not true friends of football. Now they have found that almost no one in the United States agrees with the beliefs they enunciated.

If we look on the other side of the ledger, according to the National Collegiate Athletic Bureau, in 1943 there were one hundred and sixty-two collegiate football teams. In 1941, according to the same source, there were seven hundred and sixty-five university, college, teacher's college, and junior college teams playing football in the United States. Let us think, then, in terms of the one hundred and sixty-two colleges that kept their sports going, and not of the six hundred and three that abandoned sports in the period from 1941-1943, inclusive. All honor, then, to the men at the head of those one hundred and sixty-two colleges and universities, and the men who were at the head of football in those institutions. They certainly are friends of those who believe that college football is an American institution that should be preserved.

The National Collegiate Athletic Association, as suggested in another column, has, through the years, been a friend of college football. What about those educational institutions that have never offered to help in these days when friends were needed?

One of the greatest sources of help to the men who have been fighting to keep sports alive has been the sports writers of this country. Those who have believed that our athletics were a national asset in time of war have eloquently spoken in support of their beliefs. There are so few of the leading men in the sports writing world who have taken the other attitude that they hardly need be mentioned.

The boys who were already in the service and doing each day a tremendous amount of work, but who still found time and energy to engage in athletics, and these boys may be numbered by the thousands, are the ones who should be first considered and the ones who may be listed definitely as friends of college athletics, football in particular.

The thousands and thousands of high school and college boys who, since the war, have been in the armed services and who have testified that participation in Boy Scout activities, physical training activities, and athletics helped them go through the training routine, and who urge that we keep our sports going here at home, they are the backbone of our sports world and most definitely our friends.

Finally, the men who have sought to keep alive the finest traditions of sport, to perpetuate the amateur idea, and to uphold the principles that have enriched athletics when properly conducted, they are the ones who deserve recognition at this time when we are considering who are our friends.

When this war ends, it may be that the roll will be called and the names of those who covertly now, while the war is in progress, are seeking to bring about the end of intercollegiate football, will appear, as they should, so all may know where they stood. In larger letters, perhaps, we will write the names of the college presidents, college deans, professors, athletic directors, coaches, sports writers and all who definitely proved themselves friends of sport. We will write these names so plainly that all who run may read.

Our Nation Is As Strong As Its Schools

IN OCTOBER, 1940, we were privileged to publish an article by Ralph Westervelt, Director of Physical Training, Woestina High School, Rotterdam, New York. In that article Mr. Westervelt discussed the question, "Shall we educate our children to defend their country?" He called attention to a statement that appeared in an issue of *Secondary Education* to the effect that the state maintains free public education to perpetuate itself and to promote its own interests.

This article was interesting in the days of 1940, and it is especially interesting now. Certainly, the majority of us will agree that the state is justified in attempting to perpetuate itself. There are many who feel that our system of government is outdated, and relates to the "horse-and-buggy days." We are safe, however, in stating that the great majority of our people like our form of government and want to see it perpetuated.

If the above statement is true then the next question is whether or not the educational institutions should be concerned with the perpetuation of our form of government. Again we venture to state that the majority of our people believe it is the duty of the school and college to teach respect for the American way of life and the American constitution.

Going further, is it the duty of the educational institution to help train the young men who in time of war are called upon to fight for the preservation of our government? If so, should we train them by the athletic method, the apparatus method, or the military training method?

These are questions which we are going to meet more and more frequently as time goes on. We hardly need register our conclusion regarding these matters, because for nearly a quarter of a century, we have been suggesting that our nation is strong, partly at least, because its boys have grown up the athletic way.

We bring this question up again because already there are some men, prominent in the educational world, who are suggesting that this and that athletic activity should be abolished by the colleges.

The Seventeen-Year Olds

The picture on the front cover of this issue, Dave Danner of the University of Iowa, represents this large group to which we extend our greetings.

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for MARCH, 1944

Preparing the Track Team For the First Meet

By George E. Haney

Assistant Track Coach, Ohio State University

ARE you a mathematics teacher called upon to coach track this year? Are you an old timer who wanted to retire, but the coach went to war so the principal drafted you? Are you a football coach with no spring practice this year and are helping out with track?

In this article I am attempting to review the points of organization that must be emphasized by any coach, old or new, who wants to make a success of his track and field team, and who is not satisfied to sit around and watch the boys play. I am mainly concerned here with the problems of getting a well-balanced, versatile team ready for the first meet. That requires versatility in the coach first of all.

The Number 1 problem is to interest every boy in school who is a potential track man either for this year or in years to come. Most schools which are known year in and year out as good track schools are those whose coaches maintain numerically large squads. Numbers make for variety of talent, team balance, and the pressure of rivalry that makes boys work harder. Six boys working at the same event are more likely to produce a winner than one boy who has his event "cinched." Of course, there are exceptional boys who do well, even without a coach. You may, also, cite the example of a team of two boys winning a state championship. These are exceptional cases. To enter two or three men in each event of a dual meet, plus two relay teams, requires about twenty boys at least. If you do not allow them to double in events too much, you can use as many as forty or fifty. Then, too, big squads encourage more boys to participate, which is one thing to consider these days.

How to Get a Big Squad Together

1. Send out a call for a meeting. Use the newspapers, school magazine, posters, radio, anything you can think of. Be sure to get the boys' addresses, phone numbers, height, weight, age, year in school, chosen events. (Be open-minded about this last item).

2. Tell each boy to scout his friends and neighborhood for other talent.

3. Ask your teacher friends, especially the physical education teachers and other coaches, to look for, and suggest, possible prospects.

4. Look over every boy you see around school. Some candidates may be picked

ANOTHER contributor to be introduced this month to the readers of this publication is George Haney, assistant to head track coach, Frank Castleman, at Ohio State. Mr. Haney, a successful track coach at North High School in Columbus is well qualified to discuss track coaching from the high school angle. This article, giving a general outline of track requirements, will be followed by articles on specific subjects.

by build, but you can not depend on that, for there may be some who have possibilities. Often a word of encouragement is all that it takes to start a champion on his way.

5. Ask the physical education teachers to use some track-and-field events in their classes and send the best performers' names to you.

6. Never refuse a new candidate. He may look hopeless now, but be a star of the future.

7. Work on your personnel the year round.

8. Do not limit the size of your squad. If you lack equipment let the boys use old clothes, sweaters, gymnasium shoes for practice work-outs.

When you first talk to your squad, you need to be a top-notch psychologist. You need to arouse their interest and get them into a frame of mind to induce co-operation without killing their initiative. You must stir them to hard labor and yet avoid scaring the timid souls. Here are a few ideas that should be played up.

1. As a coach you are aiming, and expect your boys to aim, at perfection. You will try to be "tops" in city, county, district, state and, yes, the nation. Yet, if you fail to reach your goal, you expect to have character enough to take a very graceful beating.

2. You are looking to the future. Therefore, you expect everybody to keep working regardless of his discouragements, and try to improve bit by bit. Look to the end of the season, and next year, and the year after the year after that.

3. To reach these aims careful, but humane, training is essential. Work hard, but do not overwork to the point of injury.

4. Mix your work with brains; read and study every track article and book you can find.

5. Cultivate graceful and intelligent acceptance of coaching suggestions. (This

also implies superb tact on the part of the coach.)

6. Team spirit is essential. Let the shot putter realize that, if the sprinter is loafing and gets beaten, it may prevent the entire squad from celebrating a team win. Get them thinking as a group. Encourage veterans to help teach the beginners. Be sure everybody gets acquainted. Have groups in the same event practice together and appoint or elect a leader for each squad, shot, discus, sprints, etc.

7. Encourage a fighting spirit, but emphasize the traditional courtesy and etiquette of gentlemanly competition, both towards competitors and officials.

8. Prepare for difficulties by explaining that progress is slow, but sure, that there will be set-backs occasionally, that beginners cannot expect to break records the first time out, but must be patient. Make your practices interesting so that the boys will enjoy the practice as well as the track meet.

9. Prepare the pampered sons for the sore muscles they may have, but warn them not to tell their mothers. Tell them to follow instructions and be sure to report next day and tell the coach about the soreness. This seems like a great amount of trouble for the coach, but after all, some of the mollycoddles turn out to be pretty good men, if the coach does a real man's job in the education which the parents have neglected.

10. Do your best to hold your group together for at least three weeks. If you get them past that point you have won the battle. More track candidates quit in the first three weeks than at any succeeding period. If you keep them with you beyond the period of initial soreness and stiffness, they begin to feel the invigorating effects of physical conditioning, of pleasure in comradeship and competition, and will probably be track "bugs" the rest of their lives.

Physical Preparation

Either at the first meeting or when the candidates first step on to the track, they should be given a few precautions:

1. Be sure that equipment fits. Blisters and cramped feet make good performances difficult or impossible. Stop before you get blisters.

2. If you have ever had shin splints (see earlier articles in JOURNAL), do not do any hard running for several weeks. Stick to easy jogging with very slow increase to



Continuing The Roster of Coaches in Service

- WEN, PAUL, Lieut., Army.
Asst. Football Coach, Univ. of Nebraska.
- WELLS, FRANK, 2nd Lieut., Air Forces.
Asst. Football and Basketball Coach, Ball State Teachers College.
- WILSON, RUDOLPH, Private, Army.
Asst. Basketball Coach, West Virginia Univ.
- WINTERS, HENRY, Lieut. (j.g.), Navy.
Asst. Football Coach, Wake Forest College.
- WILL, MARVIN, 1st Lieut., Marines.
Asst. Football Coach, Marquette Univ.
- WITT, BERT, Lieut., Army.
Asst. Basketball Coach, Calvin College.
- WILEY, J. W., Ensign, Navy.
Asst. Football Coach, Union University (Jackson, Tenn.)
- WISH, KENT, 2nd Lieut., Marines.
Asst. Football Coach, Principia College.
- WITTERWICK, WALTER, Ensign, Navy.
Asst. Football Coach, La Crosse State Teachers College.
- WERNER, AUGUST P., Lieut., Navy.
Intramural Director, Holy Cross College.
- WHITENSON, ADE, Director, U. S. O.
Athletic Director, St. Olaf College.
- WILK, CHARLIE, Lieut., Navy.
Asst. Football Coach, Utah State Agricultural College.
- WILK, ROGER, Enlisted, Coast Guard.
Basketball Coach, Berea College.
- WICKERY, JAMES T., P.F.C., Marines.
Football Coach, St. Ambrose College.
- WILLIAMS, OTIS, Lieut. (j.g.), Navy.
Athletic Director, University of Akron.
- WILSHILL, WALTER, Lieut. (j.g.), Navy.
Asst. Football Coach, Univ. of Wyoming.
- WILKIE, JOSEPH, Ensign, Navy.
Asst. Football Coach, Providence College.
- WITCHER, JAMES L., P.F.C., Marines.
Football and Basketball Coach, Doane Col.
- WYCHE, S. R., American Red Cross, Overseas.
Director of Athletics, Montana State Col.
- WILSON, HERMAN, Private, Army.
Asst. Football Coach, Johns Hopkins Univ.
- WILSON, C. L., Lieut. (j.g.), Navy.
Athletic Director, New Mexico School of Mines.
- WILSON, EUGENE F., Captain, Army.
Asst. Director of Athletics, Holy Cross Col.
- WILCOMER, DAVID, Field Dir., Red Cross.
Asst. Basketball Coach, Drew University.
- WILSON, R. C., Lieut., Army Air Forces.
Asst. Coach, Southeast Louisiana College.
- WILLAGHER, JOHN J., Lieut., Navy.
Director of Athletics, Niagara University.
- ★ GRANGAARD, ART, Ensign, Navy.
Basketball Coach, St. Olaf College.
- ★ GREEN, GEORGE, Lieut., Navy.
Director of Athletics, University of Idaho.
- ★ GROGAN, HARRY, Ensign, Navy.
Asst. Basketball Coach, New York State College for Teachers (Albany, N. Y.).
- ★ HANDRAHAN, J. B., Ensign, Navy.
Asst. Football Coach, Dartmouth College.
- ★ HARDER, THEO., Lieut. (j.g.), Navy.
Athletic Director, Santa Barbara State Col.
- ★ HAYLETT, A. EUGENE, Chief Specialist, Navy.
Director of Athletics, Doane College.
- ★ HENDERSON, ARTHUR K., Ensign, Navy.
Director of Athletics, McKendree College.
- ★ HENNEMIER, JACK, Lieut. (j.g.), Navy.
Asst. Football Coach, Washington & Lee University.
- ★ HIMSL, VEDI, Chief Specialist, Navy.
Basketball Coach, St. John's University.
- ★ HOKUF, STEVEN, Lieut. (j.g.), Navy.
Asst. Football Coach, Univ. of Wyoming.
- ★ JACOBY, GLENN, Lieut. Col., Army.
Asst. Football Coach, University of Idaho.
- ★ JOHNSEY, J. H., Ensign, Navy.
Asst. Football Coach, Union University (Jackson, Tenn.).
- ★ JOHNSON, ROY, Captain, Army.
Director of Athletics, Univ. of New Mexico.
- ★ KELLERMAN, JOSEPH, 1st Lieut., Army.
Asst. Football Coach, Middle Tennessee State College (Murfreesboro, Tenn.).
- ★ KEYSER, JOSEPH N., Chief Specialist, Navy.
Athletic Director, State Teachers College (Fredonia, N. Y.).
- ★ KRAUSE, EDWARD, 2nd Lieut., Marines.
Basketball Coach, Univ. of Notre Dame.
- ★ LASLIE, CARNEY G., Lieut., Navy.
Asst. Football Coach, Virginia Military Institute.
- ★ LEWIS, ART, Lieut. (j.g.), Navy.
Asst. Football Coach, Washington & Lee University.
- ★ MCKINNON, DAN, Lieut. (j.g.), Navy.
Asst. Football Coach, Providence College.
- ★ McNAMARA, ROBERT, F. B. I.
Asst. Football Coach, Pennsylvania Military College.
- ★ McREYAT, RALPH, Lieut. (j.g.), Navy.
Asst. Football Coach, Univ. of Kentucky.
- ★ NOE, FRED, Lieut. (j.g.), Navy.
Asst. Football Coach, Carson-Newman Col.
- ★ O'CONNOR, DEAN, Chief Petty Officer, Navy.
Asst. Football Coach, Univ. of Wyoming.
- ★ PAQUIN, LEO, Lieut., Navy.
Asst. Football Coach, Fordham University.
- ★ PELTON, MONTE, Chief Specialist, Navy.
Asst. Football Coach, La Crosse State Teachers College.
- ★ PFEIFF, WILLIAM H., Pvt., Army.
Freshman Football Coach, University of Nebraska.
- ★ PORTERFIELD, WILLIAM B., Lieut. (j.g.), Navy.
Asst. Football Coach, Univ. of Richmond.
- ★ PRESNELL, GLENN E., Lieut. (j.g.), Navy.
Asst. Football Coach, Univ. of Nebraska.
- ★ RAFALCO, WALTER, Private, Army.
Asst. Football Coach, St. Louis University.
- ★ RAY, E. J., P.F.C., Marines.
Asst. Basketball Coach, Daniel Baker Col.
- ★ ROSS, C. B., Lieut. (j.g.), Navy.
Athletic Director, Morris Harvey College.
- ★ SCHMIDT, HENRY E., Ensign, Navy.
Athletic Director, New Jersey State Teachers College (Paterson).
- ★ SMITH, ARTHUR, Major, Army.
Asst. Football Coach, Marquette Univ.
- ★ STEVENS, JAMES A., Lieut., Army.
Football Coach, Bishop College.
- ★ STOWE, D. L., Chief Specialist, Navy.
Baseball Coach, Tennessee Polytechnic Institute (Cookeville, Tenn.).
- ★ STRADER, NORMAN P., Lieut., Navy.
Athletic Director, St. Mary's College.
- ★ STRAUGH, WILLIAM, Lieut. (j.g.), Navy.
Director of Athletics, Montana State Normal College (Dillon, Mont.).
- ★ WADLEY, O. M., Asst. Field Dir., Red Cross.
Football Coach, Northeastern State College (Tahlequah, Okla.).
- ★ WARD, THURMAN, Lieut., Navy.
Athletic Director, Morris Harvey College.
- ★ WHEELER, PAT W., Ensign, Navy.
Asst. Football Coach, Oklahoma East Central State College (Ada).
- ★ WHITESIDES, JOE, Major, Army.
Asst. Football Coach, Utah State Agricultural College.
- ★ WHOLEY, WALTER, Cadet, Air Forces.
Asst. Football Coach, Univ. of Richmond.
- ★ WICKS, GUY, Lieut., Navy.
Baseball Coach, University of Idaho.
- ★ WILSON, BERNARD E., Captain, Army Air Forces.
Asst. Coach, Union College of Kentucky.
- ★ WINSO, JOSEPH, 1st Lieut., Army.
Asst. Football Coach, Niagara University.

This roster represents a partial list of coaches now in the service. The first of this list appeared in the January, 1943, issue. Additional names will be printed in subsequent issues. Witchell-Sheill Company, 1635 Augusta Boulevard, Chicago.

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hard work, using a great amount of toe and ankle exercises.

3. If you have had weak arches or ankles, do the same as for shin splints.

4. If you feel pains in the shins, ankles, arches, or Achilles' tendon, tell the coach.

5. If you feel soreness in the calves, thighs, and arms, tell the coach, but grin and keep going, but easily. You are just experiencing the normal phenomena of getting into physical condition for a new sport.

6. If you have never done any running in track shoes before, then proceed as though for shin splints, weak arches, bad ankles, etc. Take time getting accustomed to the new muscle actions.

So much for the precautions. Now, we will assume that your team is on the track and ready to work. If practical, this should be at least six weeks before the first meet. It is not fair to ask a boy to run a 400, an 880, or a mile without adequate preparation. Though not permanent, the unpleasant and painful effects of running without adequate preparation have made many a fine track candidate dislike the middle-and long-distance runs. On the other hand, boys who are well trained enjoy running these events. That is why they do it. If you cannot get six weeks of work before your first meet, be sure that the boys understand the situation, and that the events will be easier as the season goes along.

The first day's work for everybody should consist of a three-fourths mile of alternate walking and jogging while the coach gives pointers on form. Then, a set of simple stretching exercises for everybody should be given the squad. This can later be expanded for special events. However, everybody should do front bends (starting easily, for muscles can be strained doing exercises) because they are the greatest preventive for a pulled hamstring muscle or tendon. Every track man should be able to put his hands flat on the ground while standing with his knees straight. Other exercises are back bends and twists, knee bends, push-ups, and pull-ups.

After the first day, the work is gradually increased according to each individual's reactions, soreness, or events. At the end of the first week veterans may start helping the beginners get acquainted with different field events, starts, and hurdles. But do only *slow motion* work, learning positions, balance etc.

There are plenty of daily work schedules in textbooks; therefore, there is no need to list them here. The main idea anyway is to increase the work very gradually, and use common sense in adjusting the work assignment to each individual.

To get an *entire team* ready for a meet in six weeks—or less—is a challenge for the conscientious coach. With twelve to fifteen different events he must prepare two or three men for each event, if he is

to have an ideally balanced team. His problem is to pick the jobs that seem most important and concentrate on them. For example, you have a good pole vaulter but no hurdler. Then, for the first meet, instead of watching the pole vaulter, get him started, and then see if you can get two hurdlers to the place where they can run through a flight of hurdles. Even if they can only get second or third places, your team will make more points than if you spent time with a man already beyond the average. For the first meet you should aim for *many average* men. Then as the season progresses, you can polish off the rough spots and your men will push each other, as well as the opponents.

Following is an outline of the coaching points that I consider essential for each event. Some of them may seem advanced, but it has always been my contention that, if boys are told what they are trying to do, and allowed to try it, they gradually make progress. For instance, instead of having a shot putter take standing throws for three weeks, which is monotonous, have him do standing throws merely for warm-up each day and then start right in doing the entire movement. Then he feels that he is really shot putting. He will be crude, but if given one thing at a time to correct, he will be more of a shot putter in three weeks than if he had been doing standing throws and still has to learn his glide.

Here, then, is a pretty thin outline. It should be supplemented by reference to articles and textbooks on track and field, of which there are plenty. For instance, every boy on a track squad should read a rule book and should read every track textbook and article he can get. The coach should have read them first, of course, so that he is prepared to answer the flood of questions that will come. The first and most important suggestion, applicable to all events is, be in good physical condition, and then do not be afraid to warm up for practice and competition. The necessity of a complete warm-up is hard to get across to beginners.

A. Sprinting

1. Master a good position for starting.
2. Overcome tendencies to "jump," or rock off balance.
3. Develop your quickest driving reaction at the crack of the gun.
4. Learn to get a full knee lift from the first stride to the last.
5. Push all the way through with your toes when you drive. This is the follow-through of running.
6. Develop a full, free-arm drive. Follow through.
7. Drive toes down under you; do not reach out front and pull. Push behind you, driving forward.
8. Maintain body lean forward, but not falling.

9. Distribute energy so as to have a good finish.

10. Be a fighter, but a cool one.

B. Middle Distance (440-yard and 880-yard) Running

1. Develop top-notch endurance.
2. The same pointers as for sprinters apply for the first burst of speed from the marks.
3. Relax and "breeze," "float," or "coast" through the middle part of the race with very little loss of momentum, saving energy for the finish sprint.
4. Study racing strategy.

C. Distance Running

1. You need supreme endurance.
2. The same starting suggestions apply as for sprinters, but the start need not be sustained. The shift to distance form is quick.
3. During the race, relax and conserve energy, but always work just a bit harder to keep from slowing down the pace.
4. Know enough about pace to understand if the race is too fast or too slow.
5. Think as well as run.

D. Relay Racing

1. Know different baton exchanges for speed and distance relays.
2. Know how to time the start with any team mate with whom you may run.
3. Know how to hold the baton for a start.
4. Know how to change the baton from receiving hand to passing hand.

E. Hurdling

1. Learn to run hurdles stepping over with the left foot first so as not to be handicapped in running around curves in 220-low hurdle races.
2. Study the same starting and running form as the sprinters do.
3. Use special exercise to stretch the hips, so the trailing leg will come high.
4. Run on the toes; do not bang your heel.
5. Lift the leading leg bent; then snap the foot out and down over the hurdle.
6. Lean forward sharply over the high hurdles, not so much on the lows.
7. Keep the arms in close; do not "spread-eagle."
8. Normally use eight strides to the first high hurdle, ten strides to the first low hurdle in the 220-yard race.
9. Develop even rhythm in the three strides between the high hurdles and seven strides between the lows at the 220-yard distance. Do not "gallop." Sprint.
10. Develop enough endurance for a good finish.
11. Relax sufficiently to distribute en-

(Continued on page 36)

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The Physical Education Instructor Views His Job

By Forrest W. England

Football Coach, University City High School

DURING the days of their professional preparation, most of the men in physical education have read and thought considerably about the place they should occupy in the scheme of education. Too often, as we go forth into our energy-devouring tasks, we start working toward a minimum number of objectives that have struck our fancy as being desirable. It is not uncommon to find that these objectives are but slightly related to our major aims. I believe it is well to pause momentarily and take stock of our jobs after we have been in the harness a few years. What are we doing? What avenues are open to us? Though one can read chapters in texts on the place of the physical education instructor in the scheme of education, to me it seems wise for us to have our attention often redirected toward our objectives and aims while we are actually doing the duties in the field.

An instructor of physical education has many unusual opportunities in community life. His work with the children of the town places him in a rather unenviable position in some respects, in that he is pointed out as a model citizen and individual at all times. There is no man in the community who can do more good in developing the right kind of thought among youngsters, or no individual who has better opportunity for community service than he. He may argue to himself that this is not his business, that he is there to run his program intelligently. However true that may seem to him, after once accepting a position in a school system he will find that much of his time can not be called his own, for he must become a public-minded citizen.

There are many ways by which the instructor may strengthen the regard of the citizens of the community toward himself. No brief can be held for an instructor who is indolent and lazy. Most business men will believe the instructor has the easiest job in the world and they look with envy upon him since most of his time is spent in recreation. That same citizen would probably crack under similar pressure and stress that is placed on the instructor, but nevertheless it is hard to dispel that thought from his mind.

A physical education instructor should not place himself on a pinnacle and say, let them come after me if they want me. He is simply inviting trouble if he does

that. To him will fall many times the duty of organizing new town or community sports such as softball, baseball, etc. He should not underestimate his importance in the community, as he is the spokesman for the youth in that town and he, better than anyone else, can teach boys what it means to play by the code and obey the rules.

Only a few years ago a survey, conducted at the University of Illinois to determine what high school physical education instructors did to leave most frequent impressions on the minds of their students, yielded the following comments—mannerisms, posture, smoking, swearing, ideals, sportsmanship, attitude toward other faculty members and attitude toward students.

In the selection of physical education instructors, the same standards of character, training and experience should be applied as to an instructor in one of the academic fields. The instructor should have irreproachable character, enthusiasm for his work, a keen knowledge of technique and ability, keen powers of observation, and a liberal amount of that which we call personality.

The instructor, above everything else, must have the ability to organize and gain faculty co-operation. Certainly, the instructor should be freed from a corresponding amount of class-room teaching. It is important that he organize his program, so that the pupils will share in its administration. An instructor should not be judged so much by *what* he does as by *how* much he gets done.

The physical education instructor should look forward to receiving advancement in the physical education field practically as rapidly as in the coaching field. His advancement will be much more stable.

If the physical education instructor has his program basically at heart, certainly he should do some long-time planning. If he is to make long-time planning adequately effective and progressive, he should weave as much imagination into it as possible to preserve the quality of the program. I sincerely believe that the product of well-directed long-time planning in the field of physical education is likely to have as much effect in marking ballots on election day as any patriotic stump-speech made within one hundred yards from the polls.

Many of the criticisms hurled at the

people today have been inaugurated as objectives in a well-designed program of physical education. Physical education should never be satisfied with mere technique. We must be interested in producing more than perspiration. The work must have imagination, spirit and ideals. It is my humble opinion that years of labor toward these objectives will be rewarded in developing a better-balanced individual.

If good ideas, high ideals, and sound precepts have been allowed to circulate freely as has been true in America, and if ideas, ideals and precepts by which the people live are productive of selfishness and inhumanity which disrupt industry and government, something is wrong with the moral character of the people. During the crisis of recent years there has been considerable evidence that adequate courage and honesty have been lacking in the lives of American people to enable them to meet successfully the problems of an industrialized world.

Today, the United States gropes for a method to achieve economic security for the masses and at the same time preserve our democratic form of government. Those interested in physical education have understood for some years that no form of democratic control will bear good fruit and perpetuate itself, if individual courage and honesty do not ring true.

This huge job of character building has been left to the school. It is a definite fact that the influence of the home and church are weakening, when it comes to building character. Fortunately the school is better equipped to take over its duties than ever before. The amount of benefit toward character building, made possible through physical education alone, is tremendous. This new strain placed upon the school is not a strain at all, as far as physical education is concerned, but, instead, it is an opportunity. The physical education instructor can directly increase the degree of courage and honesty in his students. The class-room teacher and the clergyman are handicapped in that they must deal with abstractions. The physical education instructor can assure practical application of principles.

All of this does not mean that none of the citizens of tomorrow will fail, in a measure, to apply sportsmanship in later

(Continued on page 34.)

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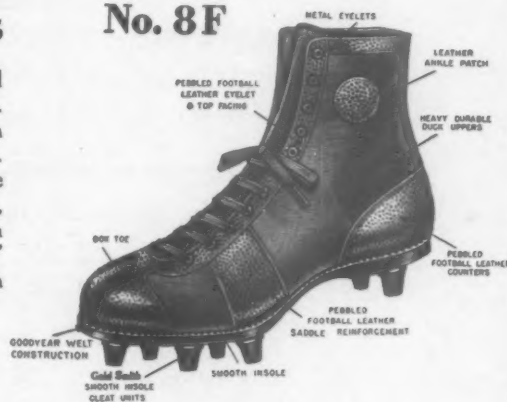
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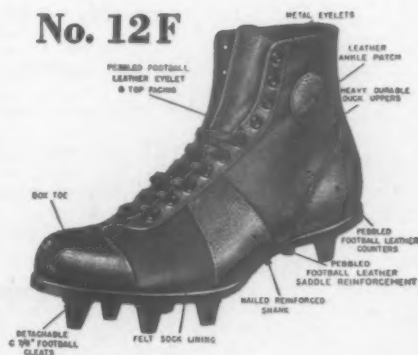


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It won't be long now until we can find our exercise out of doors, and the chance to get out into the fresh air and sunshine will give us a pretty good opportunity to determine just how serious Mr. and Mrs. America are about getting in physical shape.

Government leaders and athletic men have been urging all of us to trim down that waist line; watch our diet with regard to the loss of weight, where necessary; eat body-building foods, where indicated; get plenty of rest, and exercise to the extent that we can build up a reserve of strength and endurance.

There is no indication, as yet, that America has taken this message seriously. It has a grand opportunity, however, when the weather becomes milder, and cold, rain and possibly more snow give way to sunshine and balmy breezes. All America—men, women and youngsters—should utilize the outdoors to achieve the physical fitness required of a nation at war. All of us should choose some outdoor game to our liking, which will give us tonic exercise, emotional outlet and sharpen our competitive spirit.

The youngsters, of course, will glory in the out of doors. All they need is guidance—someone who will see that they get the proper food, the right amount of rest and supervise their play so that these youngsters will acquire such needed "vitamins" as agility, coordination, a competitive spirit and a sense of good sportsmanship.

Those young men and women in college and high school will have

THE ATHLETIC INSTITUTE, INC 9

PHYSICAL FITNESS OPPORTUNITY

an opportunity through interscholastic and intramural sports to improve the average physical fitness in this age group. Meanwhile, athletic directors are more or less pledged to offer sports activity of a competitive nature so that the student body as a whole can participate in some athletic endeavor.

It isn't hard to sell the youth of the nation physical fitness. Organically sound boys and girls must be active. The very style of dancing that prevails among the youth of the nation today is good exercise. All that is needed is to provide these youngsters with opportunity in competitive games, so they will learn strategy, teamwork, discipline, individual initiative and that victory-consciousness, which make our athletes the greatest fighting men in the world.

The older folks, however, are a tougher problem. Too many of us have taken it too easy for too long. It's an effort for us to exercise. What we must do is minimize that effort as much as possible by making our exercise play instead of work. We must choose a game, played primarily for fun, which will fit us physically in easy doses.

The approaching outdoor season offers us this opportunity. The opportunity, meanwhile, must be stressed by athletic coaches and other leaders. These men must continue to sell physical fitness to the American people, to the end that all of us will be better qualified to carry on our war burdens, with a personal pride in our appearance and the satisfaction that we are a healthier people.

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The Coaches' Confab



Basketball and Physical Fitness

By Everett S. Dean

Director of Basketball, Stanford University

ALL physical education programs in high schools and colleges have, or should have, made some alterations in their plans with respect to preparing young men for the services. Many outstanding physical training directors in the army and navy have made this statement, "Send us men in good physical condition, and we can make soldiers and sailors of them in half the time." It is plain that the objectives of, and work for, a good physical education program in war time are cut out for us. We are first concerned with good all-round physical condition, and second with the development of the athletic skills that should accompany this conditioning.

The military is primarily concerned with developing the following physical fitness factors: agility, balance, co-ordination, endurance, strength, and speed; other desirable qualities are team play, fighting spirit, poise, ability to think under fire, responsibility, self discipline, confidence and initiative. The realization of these positive qualities and the factors of physical fitness make our soldiers particularly outstanding.

Our major-sports program provides a splendid training ground for developing some of the above-mentioned characteristics required for a well-trained fighting man.

Basketball is unsurpassed in the development of many fine skills so necessary in a good soldier. It is generally accepted that basketball players make good flyers because of quick reactions, well-co-ordinated movements and the ability to relax. Basketball training abounds in opportunities to develop the requirements of the different factors of physical fitness. This battery of tests is used at all army student trainee schools to test physical efficiency; namely, push-ups, squat jumps, sit-ups, pull-ups, 100-yard pick-a-back run, Bur-

At times this section is set aside to carry short articles on various subjects. The Athletic Journal has always urged the exchange of ideas through this column.

pee and the 300-yard run. Basketball contributes heavily to the fulfillment of the qualities necessary for a good score in these events.

What other activity could train a player or soldier to better handle and control his body more quickly and cleverly? Diving head first (a la Pepper Martin) into fox holes; and in using clever, agile footwork, the soldier may win out in hand-to-hand combat, mainly because of that superiority. Good body balance is that fundamental position of the body from which all effective movements start. Basketball leads most games in this type of training.

There are few activities in which endurance can be attained to a higher degree than in basketball. The fast tempo of the present-day game makes it necessary for players to be in excellent condition. Racing up and down the floor is a great leg-and-wind conditioner. I think that the basketball type of running, of quick starts, short bursts of speed, and shifty running should be most effective when applied to battle conditions. It is a foregone conclusion that men use these skills best who have developed them into habits through long training.

The more intangible qualities, such as fighting spirit, team play, initiative, etc., come in for maximum development in this sport, which reaches more players than any other game. American fighting men are carrying the game to all parts of the world, where the game is "taking."

Lieutenant Commander Frank Wickhorst, head of the physical training work in the navy pre-flight schools, tells why basketball was chosen as one of their major activities. "It places a premium on individual competitive skill, aggressiveness, physical stamina, and in the individual's ability to fit himself into team

play. The game is particularly valuable in the development of optical, muscular and mental co-ordination."

For a maximum amount of conditioning, first, I would recommend all the outdoor work possible, with special emphasis on different types of running, such as cross country, and basketball running, as quick starts, short bursts of speed and change of direction. Indoor drills should be used that combine game conditions with maximum running.

Post-War Results of The Physical Education of Today

By Paul Taliaferro

Principal, Bowie, Texas, High School

THE present world conflict and America's gigantic effort to build the greatest fighting force in the history of the world offer an opportunity for every school in the nation to build a well-planned physical education program. The various branches of military service and the directors of the high school victory corps have asked all high schools to plan and sponsor such a program. They are offering their assistance in many ways for such a set-up. This teaching and training, classified as war preparation work, may well be a cardinal objective of secondary education. It is considered a distinct contribution to the preparation of American youths for active service in the military or production work that they will be called upon to do in the future.

We find from the present army induction records of American boys that this phase of training has again been neglected just as it had before the last world conflict. We boast of the fact that the average boy in service today is taller and heavier than those in the last war. Indeed, we are proud of this fact, but the great number of rejections might have been reduced had there been a universal physical education program in the secondary schools of America. Criticism of some



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schools for concentrating on a select group to excel in a limited number of games in interscholastic competition, has been offered. This criticism may be justified in those schools that ignored the youths, other than those on school teams, and offered them no phase of physical education. There have been some schools that have not sponsored any type of games or physical education for any group. To be commended are those schools that have maintained well-planned and skillfully directed physical education programs to take care of every youth in the school. These are the schools that, today, are proud of their many graduates who are so ably serving their country in many ways.

The present conditions afford an opportunity for the beginning of a wise program in every American school that does not have one. In the past, there have been consistent opposition and criticism from a part of the public. Physical education has been too much play and fun. Had this criticism been heeded, much of the primary training given to youths in service might have been given in the high schools. The few critics now will be ineffective, because of the national need for better physically trained youth. Complaints that might be made now will not be heard above the pleas of the nation's military and educational leaders for universal physical education. Some of the critics will have changed their minds about physical education since the records in service have told the story of the fit and the unfit. There are school men who are just realizing that health teaching and body development should be an objective of secondary education.

School men in the physical education field have their best opportunity to prove the value of their physical education program to the public. A job, well done by these leaders in our schools today will have a post-war carry over effect of great value. It certainly should be one of the helpful outcomes of education in the present crisis. Educational administrators who have not included physical education as an active part of their curricula, should certainly find a place for it now. The physical education directors should do their part and plan a program that will prove its worth.

Those schools that are now sponsoring, and those that will be sponsoring, a scientific physical education program will reap many benefits after the return of peace and the American way of life. The schools that sponsor an active program for all youths, and a program of interscholastic games for the limited number of the entire school groups will have a vastly improved type of youth from which to choose. The popular school games that are now played in America will be improved to a surprising degree. This will be true because of better developed youth to play the games. Records show that schools with an active program for the entire group excel in the

intraschool sports. The large increase in the number of these progressive schools is certain to improve the various standards of all the games throughout the country. The alert school leaders can do more than merely serve the country with the desired health programs; they can assure their schools a better future in athletics and physical education.

A Year of Army Air Corps Physical Education at Carleton College

By Roy L. Carlson

Department of Athletics, Carleton College

ONE of the ten schools in the nation which had a unit of army air corps meteorologists from February 1943 to February 1944 was Carleton College. This unit varied in size from two hundred and twenty-five men to one hundred and eighty-five. The majority of these men were recruited by the college. The men were picked on the basis of their high school background. A man was eligible for admittance if his grades in mathematics and science were in the highest rank of his graduating class. Some men came from colleges. Their academic program at Carleton put an emphasis on mathematics and physics. Their courses in these subjects were above the regular college level in degree of difficulty. National examinations were given at the end of every three months. Men failing to come up to a certain standard in the national norm on these tests were eliminated from the program. Carleton College maintained a very high rating on the academic side of the picture.

At the start of the program I gained a very poor impression of the group as to the physical fitness of the men. Looking at the group's academic background, one could readily see that the physical development had been neglected while the academic phase received the major attention. After the results of the first physical tests given to this group were known, it became quite evident that we had a job ahead of us in building up the physical fitness of these men.

At the end of nine months the results of the physical fitness tests showed the Carleton College group, along with the Ohio State University group, to be above all the others in achievement and improvement. The results of two groups of tests are shown below. The first test, push-up, sergeant jump and chin-up was given as a local test before the regular army air corps test came out. This test was given four times with intervals of about three months between each test. The second is the regular army air corps test given to all of the meteorology units in the United States at an interval of about three months. The results of the tests are given below.

LOCAL TEST

	Chin-up	Push-Up	Sergeant Jump	
Test 1...	4.3	21.8	19.01	March 1
Test 2...	6.44	29.03	20.26	July 1
Test 3...	7.7	33.37	21.02	Nov. 1
Test 4...	8.7	37.1	22.35	Feb. 1

ARMY AIR CORPS TEST

	Chin-Up	Sit-Up	300-Yard Shuttle Run	
Test 1...	5.6	50.1	53.7	June 1
Test 2...	7.7	71.4	50.7	Nov. 1
Test 3...	8.7	81.8	50.4	Feb. 1

Perhaps a summary of the program in physical education will help the reader in determining what factors were important in the development and improvement of the group's physical fitness.

The group was divided into flights with twenty-five in each. Where more than one activity was offered during the hour the men would participate by flights. The flight organization was used in the intramural program which offered swimming, wrestling, boxing, basketball, tennis, golf and touch football. The intramural program was given separately from the regular physical education period, and each participant was able to play at least twice a week. The regular physical education program was given one hour a day, that is, one full hour of participation, five days a week, Monday through Friday.

Every period opened with at least twenty to twenty-five minutes of calisthenics. At least twenty different exercises were given each time. The exercises were continuous, in that the next exercise was demonstrated while the preceding one was going on. This method cut down the time between exercises to a few seconds and allowed concentrated work for the period. An outline of the year's program is given below.

FEBRUARY 15th, 1943

Calisthenics
Wrestling
Swimming
Basketball
Indoor obstacle racing
Testing program

APRIL 15th, 1943

Calisthenics
Softball
Swimming
Soccer
Touch Football
Obstacle racing (outdoors)
Cross country
Track
Volleyball
Testing program

OCTOBER 15th—FEBRUARY 15th, 1944

Calisthenics
Boxing
Swimming
Wrestling
Basketball
Tumbling
Judo
Testing program



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Awarded Oct. 16, 1943

Swimming received a major emphasis in the program. All men were given the following test at the beginning of the term: (1) Stay afloat in the deep part of the pool for five minutes; (2) Swim 100 yards any style without stopping; (3) Using the surface dive, retrieve an object in eight feet of water; (4) Swim under water for forty feet using a diving start; (5) Perform any style of life saver's carry for sixty feet. Any person failing in one or more of the events was put into intermediate or beginners' class, depending on the events and the number in which he failed. About 50 per cent of the group passed the entire test the first time. By February 1, 1944, all but three had passed the test. Those who failed the test were given special instruction in swimming at least three times a week. The advanced swimmers were given work mainly to build up endurance. The whole group was given a course in military aquatics at the end of the ninth month.

All in all, we felt that the program was a success from every viewpoint. The group's average age was twenty years. Naturally it was easy to get a good response from such a group. We were fortunate in having good leadership from the military side. Sergeant Ralihan proved to be a fine leader who kept good discipline and saw to it that all of the men worked hard the full period. His co-operation with our department was very fine and it proved beyond a doubt that a combination of army and civilian personnel can work together.

In conclusion, this program has shown that there is no substitute for regularity, frequency and sufficient time in making or building a good physical education program. After the war, let us hope there are enough people interested in physical education who will work for higher standards, more time, more recognition and better facilities in our programs.

Teaching a Class to Broad-Jump

By Lawrence Gotschall

Track Coach
Fremont, Michigan, High School

WITHOUT a doubt, the most important factor in broad jumping is the systematized run. I have seen potential state champions eliminated in qualifying rounds because of "foot trouble". Since I have found it possible to teach an entire class in about twenty minutes to hit the take-off board in good speed, I am inclined to doubt the assertion of many track coaches that their John Doe could not be taught the art of hitting the board.

Most broad jumpers like to shorten that last step a few inches to "gather" for the leap, but I find it advisable to skip that

feature in teaching a boy to hit the board for the first time. Such fundamentals as that should be discussed with the boys after they have learned to hit the board regularly in even strides.

In high school athletics most boys run about eighteen strides, checking with each six strides. I find that the last six strides average about thirty-seven feet, six inches, the second six strides average about thirty-two feet and the first six strides average about twenty-six feet. However, a physical education class will not usually reach that average. I believe more success will come from checking more often than six strides.

Suggestions for the Freshman

For the average freshman class I like to measure off twenty-three feet from the take-off board and have the entire class run through, explaining that they are to hit this mark with the foot from which they like to jump, and reach the take-off board in four running strides. As the class runs through the marks, the director may observe the ones that overstep the board and the ones that fail to reach it. He should tell each one to check accordingly at the first station. For instance, a boy jumps six inches behind the board. He should be told to overstep the station mark by that amount. Now, after each boy has taken three or four runs through his strides, the second station mark should be placed at about twenty feet. Again the jumpers are told to hit this with their jumping foot and with not quite as much speed as the last station. They are to run through it in four strides, hitting the last station mark at full speed. The irregulars are to be cautioned and coached as to the amount they must allow at this station as well as at the first station. After a few trials the boys, by the aid of improvised marks will be doing very well with only two marked stations of four strides each. They are now running about fourteen strides since they run in shortened strides up to the first mark.

This method will assure every boy a jump. By the hit-and-miss method, the one generally used, we often have several boys failing to qualify in three attempts and many a boy, taking off so far behind the board that his jump is minimized. The boys that show skill in the jump may go from here and move back into six-stride stations which they find quite easy to master. Two years ago, after two periods of work on the broad jump in a class of thirty-two freshmen boys, eight boys jumped over sixteen feet, six over seventeen feet, three boys beyond the eighteen-foot mark and one boy in his first experience in jumping, leaped nineteen feet, four inches. This achievement came about solely from systematization of the run and nothing was said about the mechanics of the broad jump.

An All-Out Call for Baseball

EVERY boy or man, regardless of age, who wants to play baseball during the 1944 season will have a chance under a plan recently adopted by the National Baseball Congress.

Sponsorship of nation-wide baseball registration day, Saturday, March 25, means that any person who wants to play the game will sign up at any one of 8,750 sporting goods stores or departments. Special blanks, which include the necessary data, are already being distributed by the national offices here.

President Ray Dumont announced that also the lists were being placed in schools, colleges and factories in many sections.

"We expect to sign up between 800,000 and a million boys and men to play baseball under this plan," Dumont said.

The players will include those wanting to play junior, amateur or semi-pro baseball. The lists will then be available to the governing bodies of all types of baseball in each section, Dumont explained.

What They Think Overseas About Our Athletics

A PARAGRAPH from a personal letter to the editor, written by a mid-west high school coach, will be of interest.

"I have noticed with real pleasure that sports and competitive athletics back home seem to be on the up-grade, and returning to normalcy, in spite of opposition offered by some. It is as much as to say that people are learning that such programs are a contribution, and that they can be carried on even during an emergency. I know your contribution and efforts along these lines has not been a small one. Through such efforts our nation will emerge from this war with better programs in both Physical Training and competitive athletics. I am sure that a vast majority of the soldiers overseas are grateful for those back home, who through their valiant efforts, have succeeded in maintaining the sports program throughout the nation."

The Play of the Seventeen-Year Olds

In the Big Ten Conference, during the past basketball season, two hundred and six men were listed as varsity players. Eighty-two of this number were navy and marine trainees, thirteen had been deferred for special training in medicine, dentistry, and engineering. Fifty-nine were under eighteen, or had just registered and had not yet been called to service.

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A great responsibility rests on those who have in their power the fostering of interest and participation in competitive sports—for sports participation in later life depends largely on interest stimulated early in schools and colleges.

When victory is won and millions of American men and women come home, the sports programs sponsored by the armed services will carry over into their civilian lives for their own good as well as that of the nation.

Because of the great demand for sports equipment on the part of the armed services, civilians have had to make do with fewer Louisville Slugger baseball and softball bats. Today, in addition to making bats for the Army, and Navy and Marines, H & B is producing certain items of precision manufacture for the war effort. As the result of the type of work we are doing for the government, our organization of highly skilled workers and our precision machinery is being maintained intact to meet all needs for H & B famous sports equipment when we are again able to produce it exclusively.

America can surely look forward to a great sports future with full confidence.

An Experiment in Physical Education

By H. A. Leighton

Nicholas Senn High School, Chicago, Illinois

PHYSICAL education has been severely criticized for the results it has shown in the past twenty years. It has been said that our boys are soft, that they cannot take punishment, and that they are weak and do not have that will-to-win spirit. From the reports received from the army and navy we will have to admit that these criticisms have been justly made.

Not all the blame can be placed on the shoulders of the physical educator. A large part of the blame will have to be borne by the authorities who have followed the new trends in physical education and have dropped the formal gymnasium program. All the discipline of a good gymnasium program went with it. They said marching and calisthenics were unnecessary. As a result we became overly cautious. No game or exercise could be used without first taking all the elements

of danger out of it. If there were any possible chance of injury, the activity was dropped. Exercises that developed courage were curtailed. Running to any extent was dangerous because it might lead to a heart condition. All the natural instincts of a red-blooded boy were inhibited. Someone said that the real reason for the discarding of apparatus in the gymnasium was that the boys were too weak to use them. Anyway you look at it, there is some semblance of truth to these criticisms.

Over night things have changed. The boys show courage in attempting any exercise given them, providing they are properly conditioned to it. They welcome the opportunity to show that they have been misjudged in the past and that they are equal to the emergency. Their challenge is aimed directly at us now for the boys are willing and it will keep us on our toes

to keep them in bounds. They demand a variety of exercises mixed with games that call for a generous amount of body contact and that, by progressive steps, will make them into fighting men of courage, men that can "take it as well as dish it out."

With this renaissance in physical education comes the need for experimental work, work that should have been done during peace times. Shall we curtail some of the operations, that we in the past thought so necessary and that took too much of the lesson period? We will have to find ways and means of getting more than thirty minutes for work by cutting out the non-essentials.

We believe it is a good move to increase the gymnasium work from three to five times a week. We do not have the evidence that this will develop the boy proportionately. Therefore, a study along these lines is needed.

We believe we can condition a boy by having him play football, basketball or participate in gymnastics. Will any of these sports develop a boy so that he can pass the standards of the army and navy? All of these sports give something towards the ultimate development of the boy, but is any one of them self-sufficient to meet the demands of the armed services? With all the fine conditioning work we get from football, it is doubtful if a player could run three miles with full uniform, pack and heavy shoes.

The armed services tell us that the boys are weak in the shoulders, arms and legs and in the abdominal region. Our job is to give exercises that will strengthen these regions and still get out of sports that which is so necessary, teamwork, courage, the will to win, body control and the love for supremacy.

With these facts in mind I have attempted an experiment to test the validity of some of the above theories. My first problem was to compare the development of the boy who takes the regular gymnasium work that has been stepped up to two times a week with that of the boy who takes concentrated work five times a week.

My second problem was to find out how much the average boy can take during a lesson period of forty-five minutes including dressing and undressing, roll call and showers.

The third problem was to set up some sort of a standard of expectancy for the different age groups.

COMPARATIVE AVERAGES OF EXPERIMENTAL TEST IN PHYSICAL EDUCATION.

	Date of Test	1 Mile Run	Push-Ups	Pole Climb	Chin-Ups	Abdom. Curl	No. of Boys Tested
14-year-old boys	Sept. 22	6.54	10.6	15.1	5	45	13
Experimental five days a week. Concentrated work in these events every day.	Sept. 29	6.36	13	14.2	6	59	
	Oct. 5	6.32	13.3	9.5	6.5	80	
	Oct. 12	6.00	14	11.1	6	148	
	Oct. 19	6.12	15	11.2	6	210	
	Oct. 26	6.15	16	9.5	7	281	19
15-year-old boys	Sept. 22	6.53	14	14.3	4	45	
Experimental five days a week. Concentrated work in these events every day.	Sept. 29	6.25	15	11.6	6	66	
	Oct. 5	5.48	17.5	10	8	95	
	Oct. 12	5.42	18	10.6	7	136	
	Oct. 19	5.45	22.2	10.1	8	251	
	Oct. 26	6.00	21	10	8	207	14
16-year-old boys	Sept. 22	6.24	15	12.7	7	41	
Experimental five days a week. Concentrated work in these events every day.	Sept. 29	6.00	17	11.6	8	52	
	Oct. 5	5.54	17.4	9.9	7.9	76	
	Oct. 12	5.51	18	10	7.2	118	
	Oct. 19	5.48	22	10	8.7	150	
	Oct. 26	6.00	21	8.5	9	213	12
17-year-old boys	Sept. 22	6.30	18	10.3	7.6	52	
Experimental five days a week. Concentrated work in these events every day.	Sept. 29	6.27	21.5	9	9	63	
	Oct. 5	5.47	21.5	8.3	9	82	
	Oct. 12	5.49	24	7.4	9	86	
	Oct. 19	5.44	21.5	7.7	10.7	127	
	Oct. 26	5.48	26	7.4	11	176	10
16-year olds made up of regular gym class. (Controlled)	Sept. 22	7.01	15	13.8	5.8	63	
	Oct. 26	6.52	18	13.3	5.8	78	48
17-year olds. Met twice a week. (C)	Sept. 22	7.20	16.3	11.5	7.3	66	
	Oct. 26	6.45	19	11.8	7.4	70	24
18-year olds. Work not concentrated. (C)	Sept. 22	7.46	20	9	3.6	77	
	Oct. 26	6.46	21.6	9.3	3.7	89	
Best Performance		5.07	60	4.6	17	1717	

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for MARCH, 1944

A SUGGESTED STANDARD OF EXPECTANCY

	Mile	Push-Ups	Pole Climb	Chin-Ups	Abdominal Curl
14-Year Olds					
Minimum	7.20	10	15 Sec.	5	40
Average	6.30	12	11	7	75
Maximum	6.00	16	9	9	100
15-Year Olds					
Minimum	7.00	14	14	5	45
Average	6.20	17	10	7	80
Maximum	5.50	21	8	9	110
16-Year Olds					
Minimum	6.20	15	12	7	50
Average	6.00	18	10	9	90
Maximum	5.40	21	8	11	120
17-Year Olds					
Minimum	6.10	18	10	8	55
Average	5.50	24	7.5	10	95
Maximum	5.30	26	7	12	125

The fourth problem was to determine how long it would take to bring a boy up to his optimum in performance. Is there an optimum or does a boy keep on improving indefinitely?

I set up an arbitrary standard in the following events: Mile run in six minutes; push-ups 15; chin-ups 10; pole climb (20 feet) in ten seconds; abdominal curl 100.

The abdominal curl was done from a prone position with arms extended overhead; sit up and touch the knee caps with finger tips and return.

Experimental groups consisted of a basketball squad of sixty-five made up of boys from fourteen to eighteen years of age. This group met five times a week, for forty-five minute periods.

The several control groups were made up of members of a senior gymnasium class who had work twice a week. They were tested in all events and without any spe-

cial training were tested again five weeks later.

The experimental groups received concentrated work each day and were tested in one event each day. Before taking these tests this group was given a two-week conditioning course which consisted of five push-ups, climbing a twenty-foot pole, fifteen abdominal curls and three chin-ups, hanging as long as possible. They finished the period with a jog on our outdoor track of five laps. The boys jogged a lap and then walked a lap until a mile was completed. Following this conditioning course they were tested in each event. After five weeks of daily practice of all events and a test in one they were given the final test. In other words, each boy was tested five times in each event.

The mile run was timed with one stop watch with all boys starting at one time. The timer stood at the finish line and at

the completion of the final lap he called the elapsed time every two seconds. As a runner came to the finish line, he raised his hand to signify that he was finishing. He heard his time called out and reported it to his group captain.

Some Conclusions Drawn from the Experimental Test

It is realized that the number tested is too small to draw very definite conclusions. I believe the indications are rather clear that the boys in the past few years have been allowed to get soft. It is also clear that the boys, when properly motivated, will extend themselves far beyond our expectations.

In the abdominal curl my conclusions would be that after a certain amount of work the muscles seem to find a way to rest at some point during the exercise and possibly the thigh muscles, by hitching up, take up some of the work. I say that because the boys who did over a thousand curls complained of fatigue in the thigh muscles even more than in the abdominal region. The bigger the boy, the less curls he could do. All the boys who did over a thousand curls were under five feet and eight inches in height.

I believe a boy can reach his optimum in the mile, push-ups, chin-ups and pole climb in five weeks of intensive work. It is also very evident that a week's lay-off will lower his level to quite some extent. In other words, the boy must have regular work. It was also evident that a few outstanding boys could have increased their development by even more work, but that the general run of the boys reached their optimum after five weeks of hard work.

Volley Ball Builds Alertness and Stamina

By Harry W. Burdick
Hillside School, Montclair, New Jersey

VOLLEYBALL, properly played, can be a grand game. It is "tops" for alertness and skill in handling the body in all sorts of situations. While it has not taken hold in popularity with the crowd, as has basketball, it has many things to recommend it as a school game. Now that our men-in-service are playing volleyball all over the world the game may yet take its place in popularity.

For over twenty years I have been using this game on playgrounds and in the schools. Many of our boys are now in service and I am sure that they will continue to play where equipment is available.

Our policy has always been to get every boy interested in athletics. To that end all seasonal sports are played in a class period as well as after school. Thus each boy

must learn the skills of each game. Some of the children are so weak that they cannot, at first, serve the ball over the net. However, no one leaves our ninth grade without being able to use all the skills of volleyball. This wide spread instead of concentration on the few makes it possible for me to pick teams which, in playing other schools, have never lost a championship. In fact, it is seldom that more than two games are played in a match.

We have a departmental ruling that a boy must choose between basketball and volleyball when it comes to playing against other schools. Thus our basketball team plays our volleyball team in volleyball with much keener competition than our competitors. Spectator interest is fully as keen as in basketball. School administra-

tors have been amazed at the skill shown.

The game lends itself readily to teaching—and to motivation. Since, in our physical education, we use the small-squad type of activity, there is a space allotted to the skills, with a net between the wall and a polevault standard. Here the serve, set-up and finger-tip work is stressed. In our regular games we use the standard court and eight-foot net. I often get into the squad—and play in the games. This motivates the work greatly. We thus raise interest to "fever pitch" and the boys persevere as in basketball. We also have a club which meets once a week, during school hours. This is described as being for young, immature boys and those who need help—rather than for the "stars." The boys sign up with the director of clubs as



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Our boys are seldom tall enough to spike the ball so we use the one-two rather than the one-two-three system. At first I am satisfied if the ball goes back and forth, but in the last stages of development the boys cross-court their opponents both on set-up and "kill." Beside scoring on the black-board, we also keep a record of bad serves, thus showing the importance of keeping the ball, since it is folly to deliberately give it away. Depth is stressed as well as aiming for an unprotected spot. Playing the ball off the net is vital and our boys have become quite adept at it.

The amount of impossible gets keeps everyone on their toes. Here alertness comes in. In a game played recently a ball was bounced off the alumni right forward with such force that it went deep into the right-hand corner of the gymnasium. It looked like a sure point. However, the left back of the alumni raced across and, while at top speed and with his back to the net, took the ball over his shoulder as does an outfielder, flipping it up and back so that it continued in play and eventually won for his side. Plays of this sort keep the spectators in a continual state of excitement.

While there is no contact with opponents, volleyball brings out the ability to start and stop, to be in the right place—in other words, court generalship, as we say in tennis.

In picking players from the intramural groups who may make the school team, I try to use boys who are high scholastically. Such boys, once they become skillful, are more apt to place the ball where the opponents have weakened their defense—and they are more alert. I also like to use track stars, especially sprinters and jumpers. Thus we have brains, speed, alertness and court generalship.

One of the best motivators is good-natured "kidding." It helps in removing the crowd-conscious feeling and causes players to exert themselves to the limit.

Volleyball is a clean game in the sense that there are no fouls of contact. Thus there is no need for such officiating as we must have in basketball, where pictures often show as many as six players in a tangle of bodies under the basket. This game, like tennis, can be played by recreation-minded men for many years and would result in a more physically fit America.

Defensive Change of Pace

By E. W. Eveland

Athletic Director, Paris, Illinois, High School

THE success of a basketball team defensively depends primarily upon the individual defensive ability of the members of the team. There are two principal types of defense, zone

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and man-for-man, both types having many variations. In most cases, a good defensive man in one type of defense will be good in the other type.

Regardless of the type used, it is a good plan for the coach to do much individual work. Each member should be drilled thoroughly in all the guarding tactics. To accomplish this, the defensive man should start out guarding a dribbler. He should be taught the correct stance, correct footwork and the bent-knee gliding run, always between his man and the basket.

Another way to teach individual defense is to work one defensive man against two offensive men, or three men with the ball against two guards. The coach should do a great deal of criticizing. He can carry the idea further by working his centers between the basket and the free-throw line, one center using pivot shots and the other learning to guard. Both players will be learning invaluable footwork. It may be emphasized that the footwork of a basketball guard is almost the same as the footwork of a boxer.

Individual defense carries on into team defense where five defensive men are used against five offensive men. The activity should be stopped every few minutes so that the coach may criticize both offense and defense, giving special attention to footwork.

Regardless of which type is preferred by a coach, the other principal type should be taught to acquaint the team with both types of play.

One of the important things to remember about defense is that there may be a change of pace in defense as well as in offense and it is just as important. What is meant by that is that a team may be using a zone defense and change to a man-for-man, or to a loose-man-for-man and start rushing the opponent.

This change of pace if properly drilled, will upset an opponent many times and is difficult to beat. Last year in Illinois, a high school team good enough to be state champions met a very inferior team with this change of pace. This change worried and upset the better team until they did not even make their set-up shots. There are many other such instances which have occurred in our high schools and colleges.

Many high school coaches say it is difficult to teach both types to a high school boy. I believe it can be accomplished. Of course, one type or the other will be better, according to the coach's likes or dislikes.

After coaching eight sectional champions in Illinois, seven of them coming in the last eight years at Paris, I am absolutely convinced that the change of pace in defense is a very important part of basketball that is being overlooked. I am also convinced that in the end, when the real test comes and the game is in its wildest moments, the courage and stamina that it takes to be a good defensive team will mean victory. The defensive never varies, while the offense does.

The Physical Education Instructor Views His Job

(Continued from page 18)

life. The man or woman in physical education must seize upon opportunities to make courage and honesty manly attributes. Thanks to our excellent school system, the average boy is aware of how much is at stake in the matter of his own personality and character so that the instructor in physical education can more successfully confront the boy frankly with the implications of present conduct and future life than any other person on the faculty.

No physical education instructor can afford to allow chiseling, or getting something for nothing to creep into his program. This is already one of our most damnable traits. He must stress courage, courage that will allow a man to maintain self control in face of adverse criticism, courage that allows the individual to hold his place with respect to a principle.

Clearly then, the physical education instructor is a teacher of character-building traits, foremost among which is morality.

If such a bit of long-time planning as I have sketched here is to be carried out, pupils must be trained under men who are growing in the field of thought, as well as in their own field of physical education. Their understanding of society must become enriched. Properly conducted physical education may be made to serve this extremely useful purpose, but there exists deep concern on the part of school administrators as to what constitutes the right conduct of physical education. Common questions asked are, Are they worth the space, equipment and expenditure involved? Is the tone of life in our school elevated through physical education?

My answer is—we may think our part in this scheme a small one. Collectively, we are a group that will have more to do with the future of our nation than most other classes of men. It is a great challenge thrown at us, and I believe the men who are sincerely preparing for service in physical education are equal to it.

Tips on the Running Broad Jump

(Continued from page 7)

hitch kick. Personally, I have tried to coach the hitch kick and I do not believe that it can be coached to any advantage unless the jumper is a natural hitch-kicker. I have never been able to teach it to a jumper who did not naturally have the movement. I think the average boy will do just as well without the hitch-kick.

The Landing

In landing, the boy should try to extend his legs to get the greatest possible distance and, just as his feet hit the ground, a forward movement of the trunk will help maintain the distance gained. I think it is well for him to keep his feet together at landing. Most broad jumpers can learn to flex one knee at the landing and, thereby, throw themselves out to the side so that they will not fall back and lose any of the distance.

In summing up, I would say that it is necessary for a jumper to have speed, spring, co-ordination, and a perfect approach (which can only be had by much practice); to be at perfect ease on the take-off board; to be over top of the jumping foot; and to learn to extend his feet and legs just before they hit the ground.

A special note of what not to do may be added. Jumpers should avoid running through the pit. I have seen more pulled muscles from this than from any other one thing. Jumpers should practice the approach in a place where it is not necessary to run through the pit. It is not necessary to do too much jumping, but it is impossible almost to run through the approach too many times.

Cross-Country Running and the Contribution It Makes Toward Track Athletics

(Continued from page 9)

indoor running facilities. When spring comes, and we start to go outdoors again, the boys are still in pretty good condition. They then start the outdoor season with renewed interest and enthusiasm and often excel in performance most of the indoor competitors who did not engage in cross-country running. This proved to be true in two of our outdoor league championship meets in 1941 and 1943. In addition to our distance runners, the 1943 league championship 880-yard relay team, including the state 220-dash champion, all worked out in cross-country running during the previous fall.

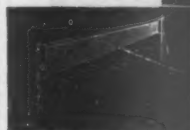
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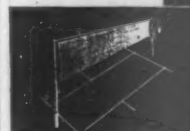
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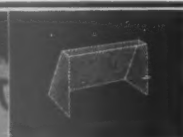
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As time goes on, track athletes are beginning to realize what benefits may be derived from the type of program offered at the Evanston Township High School in the fall. Each year in the past three seasons the turnout for cross-country running has been doubled. Last season forty-two uniforms were issued to participants.

Cross-country running contributes substantially to track athletics, and the contribution appears to be greater in the schools without indoor-running facilities. It is very important that a program of conditioning and physical fitness be in operation during the winter months of the indoor season.

Preparing the Track Team for the First Meet

(Continued from page 16)

ergy, especially in the 220-yard lows.

F. Pole Vaulting

1. Develop an arm pull by rope climbing and high bar exercises.
2. Work out a good, consistent approach of at least 100 feet. Warmerdam uses 130-150 feet.
3. Develop a smooth take-off.
4. Stay behind your pole as it rises toward vertical.
5. Swing your feet clear overhead before trying to push off from the pole.
6. Delay your snap-over and push-off or fly-away until the pole is vertical. This means follow through.
7. Let your toes and legs absorb the shock of landing so your drops will not exhaust you.
8. Do not vault within two days of a competition. Save up spring and snap.

G. High Jump—Roll Forms

1. Have a consistent approach.
2. Learn one of the roll types of jumping; it will pay off.
3. Jump *straight* from over your foot. Your kicking leg will swing your body into a horizontal lay-out. Remember your head must go up if you are to clear six feet or more.
4. Do not anticipate the lay-out by leaning toward the bar. If you want to lean, lean *back*.
5. Be sure to develop a good kick-up, starting with the knee bent, then snapping the leg on up straight on the follow-through.
6. Push all the way through with the toes.
7. Swing *both* arms upward.
8. In the Western-roll style of jumping, be sure you are twisting your shoulder and hip as far away from the bar as possible; these are the danger points of clearance.

9. In the face-down or belly variation of the Western roll, jump six inches in front of the bar to allow for the extra time needed for the body to roll over in the face-down position.

10. The preceding variation allows more time to snap the trailing leg *upward* as the body drops over the bar. The trailing leg is the part of the body that most frequently strikes the crossbar in this style of jump.

11. If you want to use the face-down roll, try to jump straight up at the take-off, and snap into your face-down position at the last instant, just as you reach the peak of your jump.

12. Never jump within three days of a meet. Do light jogging and try to accumulate snap and spring.

H. Broad Jumping

1. Work out an approach of 100 to 150 feet, depending on how far you need to run to attain maximum speed, twenty feet in front of the board.

2. Coast for the last few strides, settling down for a good lift from the board.

3. Learn to hitch-kick.

4. On the approach, think of *speed*. At the take-off, think of *height*; in the air, hitch-kick for balance; and at the landing, reach out and *pull*.

5. Work with the sprinters for speed.

6. Do plenty of front bends to prevent pulled muscles.

7. Never jump within three days of a meet.

I. Shot Putting

1. Acquire good position in *standing* puts.

2. Then start with slow glides across the circle and gradually speed up.

3. Develop maximum *strength* in the whole body, but do not sacrifice *speed* and co-ordination.

4. Learn to move across the circle in a straight line.

5. Be sure your shoulder, and the shot, are as *low* when you start across the circle as they are when you start your push.

6. Do not hesitate between the glide and the push, or you might as well stand still in the first place.

7. Cock your shoulder down and back *before* you glide, not *after* you glide. Be ready to push as soon as your feet are set.

8. Delay the arm snap. Relax your arm and think of your leg drive. Your arm will snap out automatically.

9. Get height by *lifting* the head, chest and *both* legs. Keep that shoulder back.

10. Follow through. Push as far as you can reach with your hands and toes. The reverse will take care of itself.

11. A short, quick glide will give more speed to the shot than a long jump and stop.

12. Keep your driving foot *back* of you.

13. Do not throw hard within three

days of a meet. Not at all for two days before.

J. Discus Throwing

1. Take a very wide stance and practice standing throws for warm-up.

2. On the back swing, try to make every vertebra crack.

3. Swing with the entire body and lift with *both* legs.

4. To get height, lift the head and chest as you pull.

5. Make the abdominal muscles pull.

6. Learn to use a spin by starting very slowly and keeping your balance.

7. Be sure your steps are in, a *straight* line. Draw a line and watch it. Even in a meet.

8. Eventually you may spin at top speed, but do not try it too soon.

9. On your last step around, the discus must be trailing as far back as your back will twist. Otherwise, you might as well stand still in the first place.

10. Keep your legs *slightly* bent so that you can get some lift from them.

11. Do not throw within two days of a meet.

K. Javelin Throwing

1. The best suggestion I have is to learn the Finnish style of throwing. It combines speed with a powerful position.

2. A good throwing arm is necessary.



These early season games are tough on your squad. Right now, when your players are still soft, you're apt to be faced with a whole crop of injuries. Charley horse, sprained ankles, "glass" arm — wrenched muscles.

For all these early season injuries Antiphlogistine is a tried and proven first aid — a ready-to-use medicated poultice. Employed by crack trainers — the country over — because it is specially qualified to

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TRAINERS JOURNAL

SECTION

The NATIONAL ATHLETIC TRAINERS ASSOCIATION

Tests of Body Function as Measures of Progress in a Physical Training Program

By W. W. Tuttle, Ph.D.

Department of Physiology, University of Iowa

CHANGING the so-called "soft" American youth into a tough performer, whether in sports or battle, has been efficiently and quickly done. Success in this endeavor is due to the fact that American youth was not as "soft" as some may have thought, and to the knowledge which trainers had acquired during years of experience, as to the requirement of an adequate training program. That our training programs have worked well can not be denied since the accomplishments of the participants have been noteworthy, even spectacular, all over the world.

One of the problems confronting administrators of training programs is to show periodically, the progress which is being made. They may wish to show what improvement, if any, is being made in physical capacity and condition, as well as in athletic performance. In order to do this, various tests are employed. When tests are correctly used, and when their limitations are recognized, they can be of great value. Only in the light of the limitations of a test can the results secured by it be interpreted fairly. If this is not done, unwarranted conclusions may be drawn, and the whole training program discredited or overrated. It is the purpose here to con-

sider some of the difficulties that may be encountered in using and interpreting certain tests of body function.

In the first place, let us all be suspicious of spectacular results. When such results are proclaimed, one can be assured that they will be checked and rechecked by a multitude of investigators. No one can afford to stake his reputation on spectacular findings, until he is quite certain that they can stand up under cross-examination. Large amounts of money have been spent, and trainers have proceeded on false assumptions through no fault of their own, simply because careless researchers have promulgated false ideas.

In the second place, we should not claim a cause-and-effect relationship, unless a control experiment fails to show the result in question. It is generally recognized, for example, that vital capacity may be increased as a result of certain types of physical training. It is not advisable, however, to use vital capacity scores to demonstrate the effectiveness of a training program. The reason for this is that, by practicing deep breathing, the vital capacity of a control group not participating in any other type of exercise also becomes progressively greater. A similar situation ex-

ists in riding a bicycle ergometer. By doing no other exercise than riding the bicycle, one experiences a progressive increase in capacity for this work. There are several examples in literature in which a progressive increase in the capacity to ride a bicycle was attributed to other factors, when in reality the cause was nothing more than repetition in bicycle riding.

It is never safe to conclude that, by adding something to a diet, capacity to do work is phenomenally improved, unless a matched group is run parallel to the experimental group, as a control. If the control group fails to show the improvement, and the experimental group does show it, then perhaps, the dietary factor is responsible. If the experiment can be repeated with similar results, this is additional evidence of the authenticity of the findings. And when it can be universally repeated with similar findings, then the conclusions can be stated without reservations.

It was reported to me recently that, by adding accessories to the diet of athletes, a phenomenal health record was set. Knowing the general physiologic effects of the food elements concerned, I was prone to reject the idea that the alterations in diet were responsible for the health record. In

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this instance the effects were apparently there but it is doubtful that they were due to the new dietary regime. The person who made such a claim has no proof since the findings in his experimental group were not checked against a control group. How did the investigator know what health records would be established by the experimental group during the period in question, had the diet accessories been omitted? In this instance, the question can never be answered. The available experimental evidence, however, leads us to believe that in this case the accessories used had nothing to do with either health or the capacity to do work.

The effect of practice may be evident in some tests of strength as well as in bicycle riding. For example, in testing a group of twenty-five college women for leg strength by means of a belt dynamometer, there was a marked improvement from week to week over a period of three weeks. The group average for the first set of scores was 570 pounds. The second week the average was 673 pounds, an increase of 103 pounds. Complaint concerning the way the belt fit the hips prompted the securing of another belt before collecting the third set of scores. The third weekly test gave a group average of 837, an increase of 164 pounds. During this period, other strength scores (grips, push, pull, and back strength) changed but little. Had these girls been indulging in a program for strengthening leg muscles, and had this particular leg strength test been used as an index of improvement, the conclusion might have been that the program was responsible for a progressive increase in leg strength. However, in this instance, the group was indulging in no training program of any kind. In the light of this fact and the result of the other strength tests, one was forced to believe that some factor other than an increase in leg strength was operating. No doubt, part of the increase in the leg strength score was due to the fact that by practice one learns how to apply strength to a dynamometer more effectively. Furthermore, in this instance, the first belt tended to hurt the hips when strength was applied to it. The new belt alleviated the difficulty, permitting a greater effort on the part of the girls.

Considerable time and effort have been spent in attempting to develop adequate tests of physical condition. One of the approaches has been through the use of cardiovascular tests. If one is to obtain a complete picture of cardiovascular changes as related to physical condition, every cardiovascular element would have to be measured. To undertake this would be folly because it is either difficult or impossible to measure some of these elements. For this reason, we must resort to sampling the cardiovascular elements, using only those that can be readily measured. Although the sampling attack must be employed, it falls far short of yielding the results that would be obtained if all the items

involved in cardiovascular response could be included as test items.

Since heart rate and blood pressure are known to vary with many factors such as age, sex, emotional states, and physical activity, it is a mistake to interpret cardiovascular scores solely in terms of physical condition. A standard exercise may be more strenuous for one individual than for another, because of differences in body size and strength. Obviously then, cardiovascular test scores will not correlate very highly with independent measures of physical condition. This means that cardiovascular tests are limited with respect to validity. It does not mean that such tests are to be discarded as being of little or no value, rather that test scores should be interpreted with the fact of low validity in mind.

Physical condition is a term that is difficult to define because it describes the relationship between the actual and the potential capacity of an individual to do work without injury or undue fatigue. An eight-year-old boy may not be able to do as much work as a mature individual, but both may be in excellent physical condition. The same thing holds for a big man and a little one. Physical condition can not be measured directly in terms of work output; it is work output in relation to what the individual can be expected to do. For this reason, measures or ratings of condition are in themselves fallible and lacking in validity. Therefore, the correlation between cardiovascular test scores and available measures of condition are spuriously low. It is for this reason that certain cardiovascular tests should be retained, even though the scores appear to have little significance from a statistical point of view.

The development of tests of condition, endurance, and physical efficiency, as well as other tests, has involved a rather wide use of certain relatively simple statistical procedures. Unless a person has a good working knowledge of elementary statistics, he is severely handicapped in analyzing test results and in understanding the work that others are doing along this line. For most purposes it is sufficient to know what is meant by correlation, probable error, standard deviation and measures by which differences are evaluated. If one will apply himself for a reasonable length of time to the task of learning about these simple elements of statistics, one will be able to understand quite completely, most scientific reports. This falls within the ability of almost everyone capable of doing research at all, and it is certainly essential for those who wish to comprehend the reports of other investigators.

In general, the intelligent use of tests of body function in the physical training program is to be encouraged. If, on the basis of information gained by testing, the effectiveness of a program can be materially improved, time spent in analyzing the results will have been well spent.

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Announcements

LAST year in this column we ran announcements of valuable material that might be obtained from the advertisers of this publication. This column is being set aside this year for the use of news items regarding the advertisers. In this issue, the column is devoted to the Coca Cola Company and its high school intramural softball tournaments.—EDITOR'S NOTE.

COCA COLA is one of the first large advertisers in the United States to tie in part of their advertising program with an amateur sport, thereby assisting with its promotion.

In their advertising budget is an item reading, "Amateur sport promotion." This is a most significant and worth-while bit of advertising, since it gives momentum to a physical fitness program of nation-wide proportions during these times when stress must be made on the health of, and welfare for, the youth of America.

The number 1 reason for this sport item on the advertising budget of the Coca Cola Company is the sport mindedness of its officers, and especially its public relations officer, Bill Kaliska, one of the most outstanding sport fans in the country. When you sit down in Bill's office for a chat, you can be assured that he will rattle off scores of football, baseball, and softball games and results of other outstanding sports events together with the dates of play for years back. Upon *leaving him*, and he doesn't *leave you* until you are safely on the elevator of his office floor, you quickly sum him up as living for three things, his family, the Coca Cola Company and sports of all kinds.

In 1943 when the Amateur Softball Association had a problem as just how to promote the game of softball as an intramural sport in high schools and in the United States service camps, it was to Bill Kaliska that we went with our problem, and it was Bill who solved it. He gained the permission of his company to purchase trophies and medals for every high school and service camp in the United States, without cost to the school or camp, that would conduct an intramural softball tournament, under the leadership of the Amateur Softball Association.

Details of the plan are simple. Any school or camp can conduct the program with very little additional work, and thus become enrolled in the greatest nationwide physical fitness program in existence today. The advertising of the Coca Cola Company on the opposite page gives full details. The Amateur Softball Association sends you sample brackets, the 1944 Official Softball Guide and tournament instructions. At the completion of your tournament, you fill in the bracket with team names and scores and return to the national office of the Amateur Softball Association, and medals will be sent for your champion team, without charge.

M. J. PAULLEY, *Executive Secretary*,
Amateur Softball Association,
8458 South Yates Avenue,
Chicago 17, Illinois.

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.....boys teams School name
.....girls teams City State
Coach's name

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